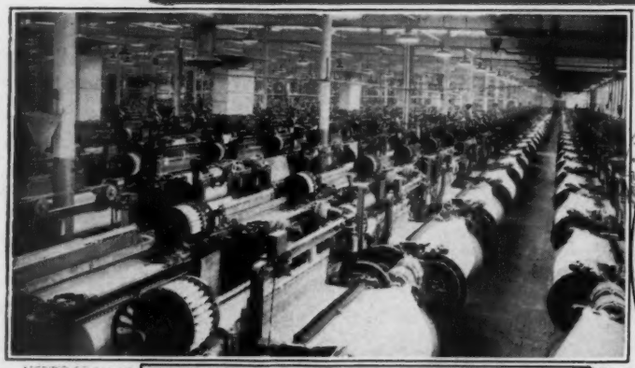
MARCH, 1935

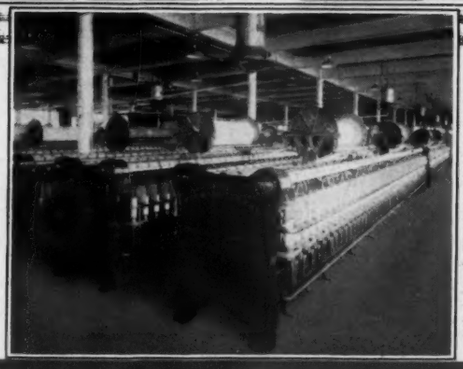
COTTON

Serving the

TEXTILE INDUSTRIES

MODERNIZATION





A *Paying* INVESTMENT

Never have conditions so completely justified proper expenditures for a comprehensive modernization program in every department of a mill. Relocation and better grouping of machinery sometimes materially increases production and reduces operating costs. Replacing obsolete machinery always pays good dividends.

Many Textile executives are choosing TODAY as the time to carefully plan for the future and make every department earn its proper dividend. Such a program makes strenuous competition a healthy stimulus instead of liquidation.

Our organization with a staff of experienced engineers — textile, mechanical, electrical, construction and civil — is prepared to take your problems, study each aspect and work out a comprehensive program for competitive efficiency.

We will be glad to study this problem with you . . . preliminary consultation is entirely without obligation.

ROBERT AND COMPANY

ATLANTA INCORPORATED GEORGIA

Architects and Engineers

"... with the greatest of ease"

Taking the song about the man on the flying trapeze at its face value, the uninitiated might assume that the trapeze performer acquires his art with comparatively little effort.

"Oh, yeah?" is the challenge of the well informed, for the fact is that trapeze artists who would acquire any great degree of skill have to begin their training in early youth.

In this respect the man on the flying trapeze and Franklin Process Custom Yarn Dyeing have much in common. Franklin Process, in its four plants, using Franklin Process Package Dyeing Machines exclusively, dyes a great variety of yarns promptly and efficiently with all types of soluble dyestuffs in larger

OH, YEAH?

annual volume than any other yarn dyeing service in the country. This fact may lead the uninitiated to assume that a successful yarn dyeing service is little more than a matter of installing package dyeing machines.

Custom Yarn Dyeing
Natural Yarns Colored Yarns
Glazed Yarns
Dyeing and Processing Machines

THE COLORS YARNS IN THIS FABRIC ARE FRANKLIN PROCESS DYED FASTNESS TO WASHING AND LIGHT GUARANTEED WHERE USED

When you pay for colors of KNOWN fastness, advertise the fact. Use the Franklin Process Fast Color Label. Ask us about it.

Reverting to vernacular, our answer is "Oh, yeah?" It has taken us a quarter century to bring Franklin Process Custom Yarn Dyeing to its present stage of comparative perfection, and we have no fear that our achievement will be duplicated overnight. Our course has been far from smooth sailing.

Franklin Process machines have played a sterling part in bringing us leadership, but only a part. Human knowledge, ingenuity, persistency and above all EXPERIENCE have been equally important contributing factors.

Real achievement is always born of experience. Therefore, if you want superior as well as economical yarn dyeing, order from —

FRANKLIN PROCESS

ESTABLISHED 1910

Pioneers in Package Dyeing

PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA • N. Y. REPRESENTATIVE, 40 WORTH ST.

COTTON is published monthly by W. B. C. Smith Publishing Co., Dalton and Atlanta, Ga. Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

Draper Corporation
requests the honor of the presence of
Mr and Mrs Textile Millman
their associates and friends
at the
Coming-Out Party
of their twin daughters
Miss X K Model Loom
and
Miss X L Model Loom
Monday to Saturday
April the eighth to thirteenth
nineteen hundred and thirty-five
at the Textile Show
Greenville South Carolina

Less wear . . *Less* stain

You no longer have to choose between the twin penalties of excessive wear due to too little oil, and excessive spoilage due to too much oil.

Texaco *tested* Lubricants will enable you to maintain faster operating schedules without incurring maintenance and repair expenses that eat into profits. Texaco engineers, with a wide range of experience in cotton mill lubrication will be glad to cooperate with your operators. They will help you in the selection and proper application of Texaco *tested* Lubricants so as to show you how to avoid "oil throw."

There is no cost attached to finding out whether Texaco can help get more profitable yardage from every loom you operate. Write for a representative to call and show you what we have done for many other cotton mills.

TEXACO
REG. T. M.

THE TEXAS COMPANY
135 East 42nd Street • New York City
Nation-wide distribution facilities assure prompt delivery

TEXACO *tested* LUBRICANTS

REFINERY TESTED FOR UNIFORMITY • • • SERVICE TESTED FOR ECONOMY

CAPTURED

SNOW WHITE BEAUTY

FOR YOUR PLANT INTERIOR

DULUX is snow white. Smooth, pure, clean—a white finish that *stays* whiter and cleaner. Easy to apply . . . quick-drying . . . non-yellowing. That's DULUX. Use it to give your employees better light —*more* light. To help them be more efficient. To speed up production. To reduce your maintenance costs.

The coupon will bring you an important story on how to keep your plant clean and white. Send it today.

New

DU PONT REG. U. S. PAT. OFF. **DULUX**

REG. U. S. PAT. OFF.

The whiter **MILL WHITE** *that stays white*

E. I. du Pont de Nemours & Co., Inc.
Finishes Division, Wilmington, Del. I'll be glad to have your booklet, "DULUX Mill White." Send it to

Name.....

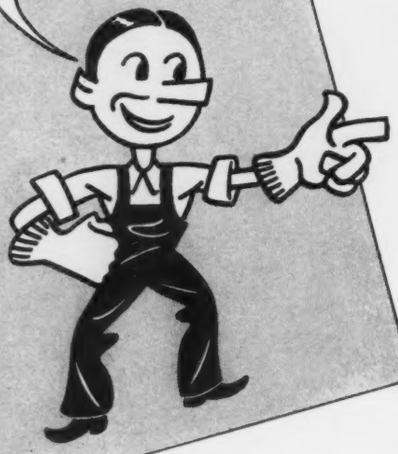
Company.....

City.....*State*.....

Position.....

Let us solve YOUR *problems for you!*

Question



Corn Products Sales Company
17 Battery Place
New York City

Gentlemen:

Your two-color advertisement on the back cover of the Feb. 7th issue of Textile Bulletin interested us very much. We, too, would like to avail ourselves of the service as rendered by your Research Department. Our "question" is: —

Starch manufacturers often refer to varying "fluidities," such as 20, 40, 50, 60, etc. Exactly what is meant by "fluidities" in starch, and why is one fluidity more or less desirable than another?

We will appreciate an early reply from you relative to the above question. Thank you.

Very truly yours,
The B. T. & R. MILLS

THE facilities of our Research Department are at your disposal. We hope you will feel free to take advantage of this service.

ALL QUOTATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

CORN PRODUCTS SALES COMPANY

17 Battery Place - New York, N.Y.

MILL STARCH DIVISION

The B. T. & R. MILLS
South Carolina

Gentlemen:

In reply to your recent letter, we are glad to send you the information you requested. Our Research Department reports as follows: —

Starch and water, when boiled to a paste, will produce sizes of different consistencies, depending upon the nature of the starch. We indicate the consistencies or fluidities of these pastes by measuring the volume of a standard solution that has passed through an orifice in a definite time. Hence, the thinner the paste the higher the fluidity number of the starch.

If two pastes or sizes are prepared to have the same consistency or fluidity it will be found that more of the 40 F. must be used than 20 F. to obtain this consistency. The one made of the higher fluidity will contain more dry substance starch. Therefore, the size with the greater concentration will carry more starch into the warp, thereby giving greater weight and strength.

Hoping this answers your question fully, we remain

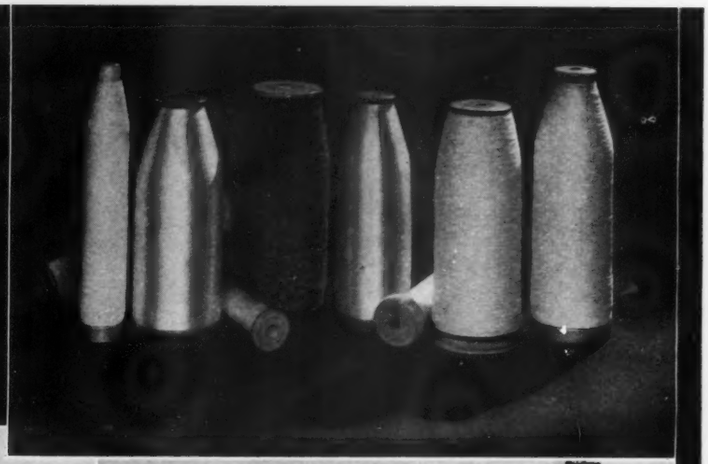
Very truly yours,
CORN PRODUCTS SALES CO.
Mill Starch Division

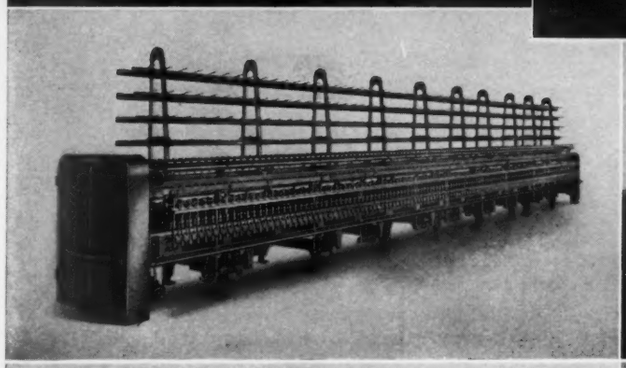
Answer

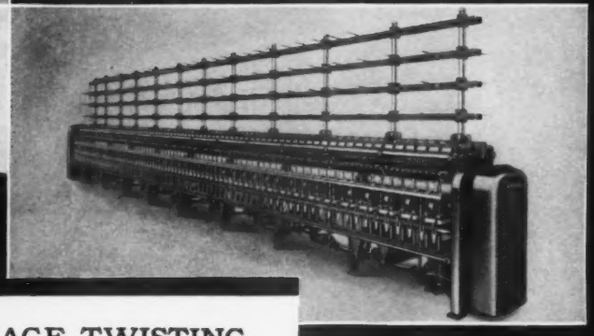
CORN PRODUCTS SALES COMPANY • 17 BATTERY PLACE, NEW YORK CITY
BRANCH OFFICES: GREENVILLE, S. C. • SPARTANBURG, S. C. • BOSTON, MASS.

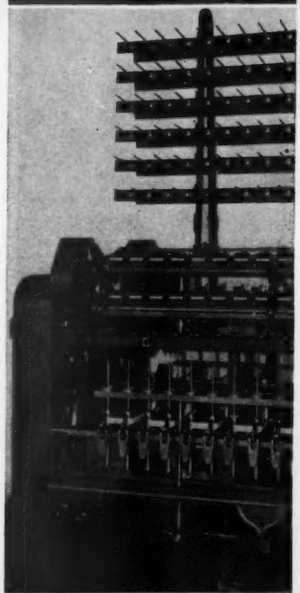
HIGH SPEED TWISTERS

for • COTTON
• WORSTED
• RAYON
and SILK









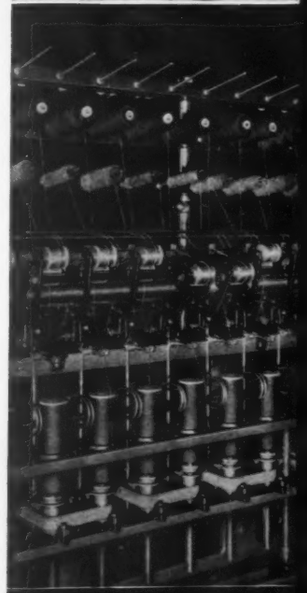
. . . LARGE PACKAGE TWISTING for long length, knotless yarns. . . . .

. . . WINDING and DOUBLING costs are reduced to a marked degree. . . .

. . . WEAVING EFFICIENCY is higher, sewing and burling expense at minimum. . . . . .

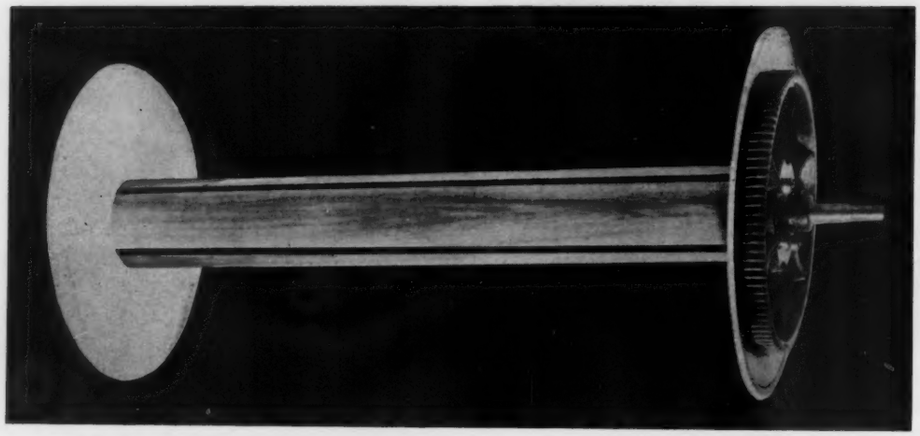
. . . BANISH SINGLES in two ply and all plied knots in multiple ply yarns. . .

. . . NOVELTY YARNS in endless combinations are made chiefly on Whitin Novelty Yarn Twisters, which are adaptable to quick market changes in styles. . .



WHITIN

Charlotte WHITINSVILLE Atlanta



• COMPLETE LOOM BEAMS •

BEAM HEADS • BEAM BARRELS

West Point loom beams are superior because they are properly made of the right materials.

• REPAIR PARTS •

West Point textile machinery repair parts are made of toughest iron, from properly made permanent patterns, and finished on modern machines. They fit, they last long and they are economical to use.

• QUICK SERVICE •

• FAIR PRICES •

Inquiries Solicited

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA.

Also manufacturers of
special machinery, cloth inspecting machines, textile gears.

CROMPTON & KNOWLES LOOM WORKS
WILL SHOW
5 NEW HIGHER EFFICIENCY LOOMS
AT THE
SOUTHERN TEXTILE EXPOSITION
IF UNABLE TO GO TO GREENVILLE SEE THEM IN WORCESTER

Type C-3 Cotton King Cam Terry Towel Loom—Bobbin Changer 33" between swords, 4 harness, 2 x 1 box, 8¼" x 1⅝" bobbin. Weaving 3-pick toweling at 182 picks per minute.

Type S-3 Super Silk and Rayon Loom—Shuttle Changer 56" between swords, 20 harness intermediate head, 2 x 1 box. Weaving rayon crepe.

Type C-3 Cotton King Knowles Head Motion Loom—Bobbin Changer 48" between swords, 16 harness, 2 x 1 box, 8 ¾" x 1⅝" bobbin. Weaving plaid cotton pant goods.

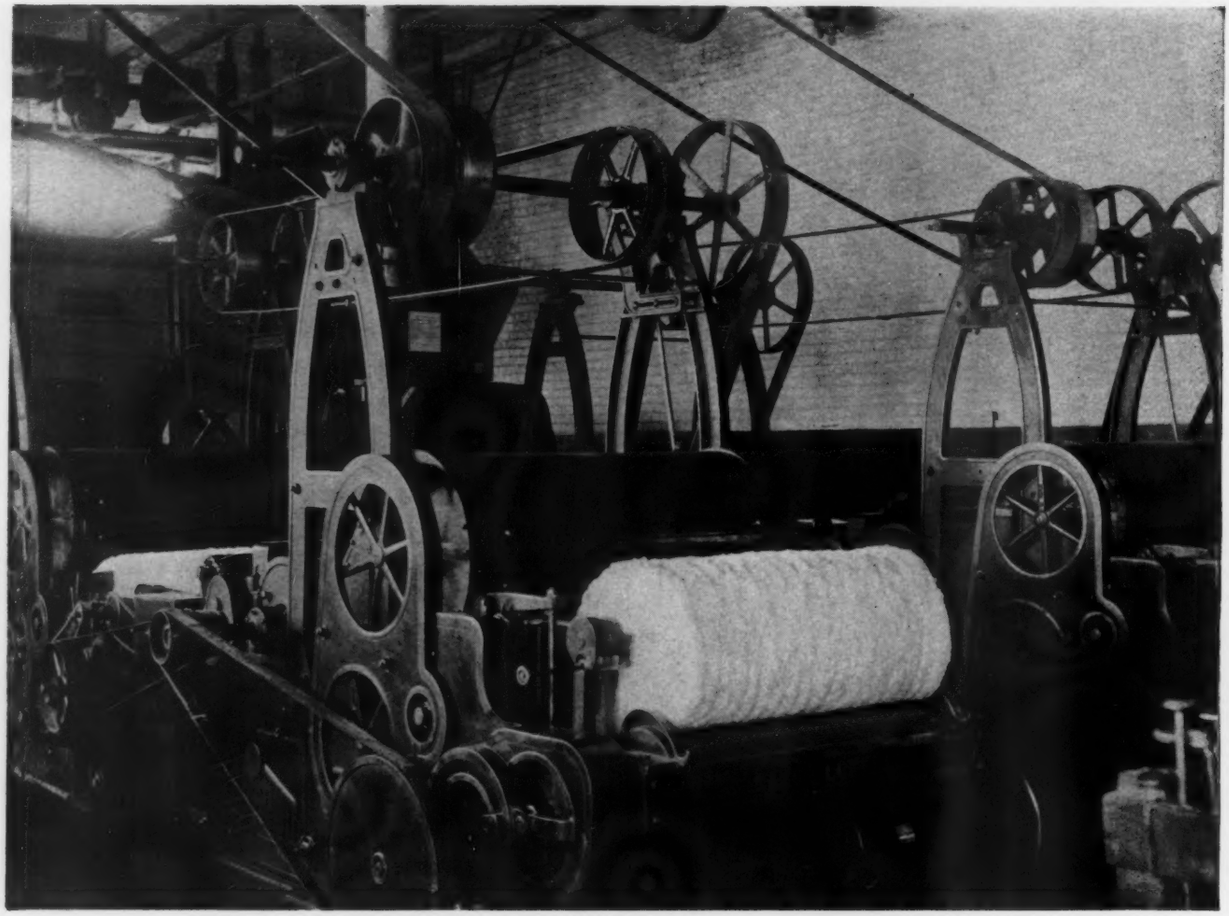
Type S-4 Super Silk and Rayon Loom—75% automatic—Shuttle Changer 56" between swords, 20 harness dobby, 4 x 1 box. Weaving fancy rayon.

Type W-3 High Speed Woolen Loom—Bobbin Changer 92" between swords, 26 harness head, 4 x 1 box. Weaving men's overcoating.

CROMPTON & KNOWLES LOOM WORKS
LOOMS FOR COTTONS, SILKS, RAYONS, WOOLENS, CARPETS AND RUGS, BLANKETS, JACQUARD FABRICS, ASBESTOS, LINENS
Allentown Philadelphia Pawtucket WORCESTER, MASS. S. B. Alexander, So. Mgr., Charlotte

Modernize your Picker Room with

Aldrich Synchronized Single Process Picking



The most widely used single process picking system in the Textile Industry.

Simple—Inexpensive—Efficient—

Made and Installed by

AldricH MachinE

Greenwood, WorkS South Carolina

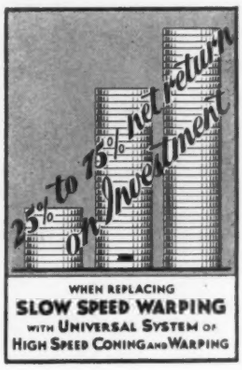
WHEN THE *lowest* PRICE IS THE *richest* INVESTMENT

Several choices were open to a mill replacing its obsolete slow speed warping equipment. One of them was to install the Universal System of High Speed Coning and Warping at the lowest investment cost of any high speed system.

Twice the net return. When the savings were compared, the Universal System showed a net return on investment 100% higher. On this basis, the Universal System would require the least amount of money—and for the shortest time.

Half the depreciation. The lower depreciation cost ***throughout the life of Universal machines,*** together with the lower maintenance cost, offsets other savings possible with machines of higher investment cost.

And weave room savings. Also considered were savings in the weave room. Uniform winding speed permits minimum tension, and the elasticity of the yarn is retained. Dead yarn is eliminated by the magazine creeling system which takes every last inch of yarn from the cone. And the electrically-controlled stop motion on the warper prevents lost and crossed ends in the loom beam. These improvements result in substantial economies in the weave room.


25% to 75% net return on Investment
WHEN REPLACING
SLOW SPEED WARPING
WITH UNIVERSAL SYSTEM OF
HIGH SPEED CONING AND WARPING

In 3 out of 4, more return. This was an average-sized mill—the case, an average case taken from our files. The results, we are sure, would be relatively the same for almost any other mill. In fact, in 3 out of 4 mills now doing slow speed warping, the Universal System will bring a greater net return than ***any*** other system—and, in ***every*** case, will return 25 to 75% a year.

Where does your mill stand—is it one of the "3 out of 4"? It will entail no obligation to find out. If you have not had an estimate of savings and investment submitted by our firm within the past year, it will pay you to get in touch with us now. Address Dept. A, Boston, or the branch office nearest you.

IN 3 OUT OF 4 MILLS MORE NET RETURN

Universal System of High Speed Coning and Warping

UNIVERSAL WINDING COMPANY

BOSTON

NEW YORK · PHILADELPHIA · PROVIDENCE · SPRINGFIELD · UTICA · CHARLOTTE · ATLANTA

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.
CARD CLOTHING

THE SYMBOL OF SERVICE AND QUALITY

The cotton and woolen mills who use Tuffer Card Clothing have at their command superior quality which sixty-nine years of scientific knowledge and manufacturing skill has produced.

Correctly designed, made of best materials, manufactured by processes handed down through generations, Tuffer Card Clothing gives long, continuous service and uniform results.

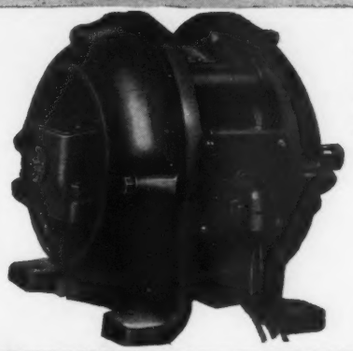
Tuffer Card Clothing has still another significance for boss carders. A thorough and comprehensive inspection system examines every point before the finished product leaves the factory. While every material used in making Tuffer Card Clothing is of unquestionable quality, the human element is most important. No other factor overshadows craftsmanship in its contribution to Tuffer quality. Thus the high standards of Tuffer quality are maintained.

If you have never used Tuffer Card Clothing in your card room, a trial order will convince you why so many mills prefer Tuffer quality and service. Write the nearest Howard Bros. office for quick and unfailing service.

HOWARD BROS. MFG. CO.
HOME OFFICE AND FACTORY: **WORCESTER, MASS.**
So. Plant: 244 Forsythe St., Atlanta, **Branch Offices:** Philadelphia, Dallas, Washington

Products: Fillets for Feed Rolls, Lickerins, Tumblers, Strippers, Workers, Doffers, Fancies, and Cylinders, Doffer Rings, Strickles, Emery Fillets, Burnisher Fillets, Top Flats Recovered and extra sets loaned, Lickerins Rewired at Southern Plant. Midgley Patented Hand Stripping Cards and Inserted Eye and Regular Wire Heddles

REDUCE WEAVING COSTS



G-E 1800-rpm. loom motor with waste-packed bearings. Large-capacity oil reservoirs reduce the frequency of fillings and cut the cost of maintenance

WITH THE G-E LOOM MOTOR

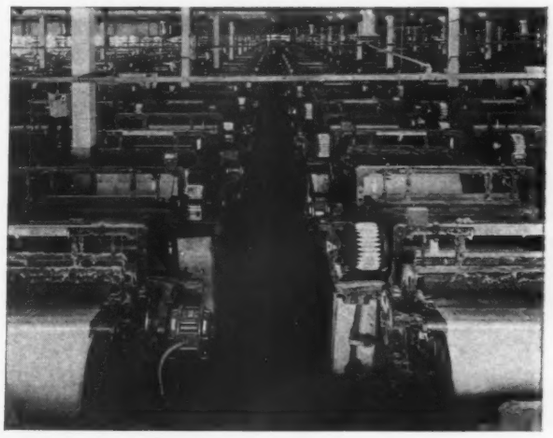
G-E starting switch for loom motor, mounted on pedestal; cover closed

BY installing General Electric loom motors in your weave shed, you can obtain for your mill important operating economies that will cut your weaving costs and help you build profits.

The General Electric loom motor is built with the sturdy construction necessary for successful performance with modern high-speed looms. Because of its superior design and the high quality of its materials and workmanship, it offers mill operators the following major advantages:

1. **Exceptionally low power consumption,** which reduces operating costs.
2. **Sustained high speed,** which maintains maximum production under varying load conditions.
3. **Ample reserve capacity** for breaking in new looms.
4. **Positive lubrication with infrequent oiling** because these motors are equipped with trouble-free, waste-packed bearings and large-capacity oil reservoirs. Wool-yarn packing can be easily inspected or renewed without disturbing motor bearings or mounting.
5. **Exceptionally long life,** with low maintenance.

Get these cost-reducing, profit-building advantages for your mill. Investigate, also, G-E control, switchgear, power-generating apparatus, wire and cable, and other products which General Electric makes for the textile industry. An experienced sales engineer in the G-E office nearest you will be glad to help you solve your electrical problems efficiently and economically. Why not get in touch with him? General Electric, Schenectady, N. Y.



G-E 1-hp. loom motors driving looms in weave shed of a large southern textile mill

020-141

GENERAL ELECTRIC

For the want of a NAIL...

a battle was lost!

A few leaky valves or fittings can bleed piping of steam equal in cost to the wages of a laborer. For want of materials many plants today are fighting a losing battle with rising production costs.

Yet replacement is not being made in scores of plants because the plant engineer hesitates to ask for an expenditure. Every economy during stringent years appeared to be money saved. Now, steam lines, power waste and increased production costs demand that the engineer be heard.

To locate losses a thorough and conscientious checkup is necessary. Crane Co. has prepared a Plant Checkup List which it will send to plant executives and engineers. Crane engineers will gladly cooperate in the actual plant survey.

A southern Illinois milk processing company spent $300 for Crane piping and materials to direct engine exhaust steam into a milk evaporator. The company reports a $1,500 annual saving as a result.

Crane quality valves and fittings not only answer today's urgent demand but the long-pull demands of tomorrow. Install Crane equipment now and maintenance cost will strike a low and stay there. Lose no time. Write for the Crane Plant Checkup List today.

Visit Crane Booths 462-463, Southern Textile Exposition, Greenville, S. C.

CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS • NEW YORK: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

IN THE SPOTLIGHT

STEIN HALL
WARP SIZING
STARCHES

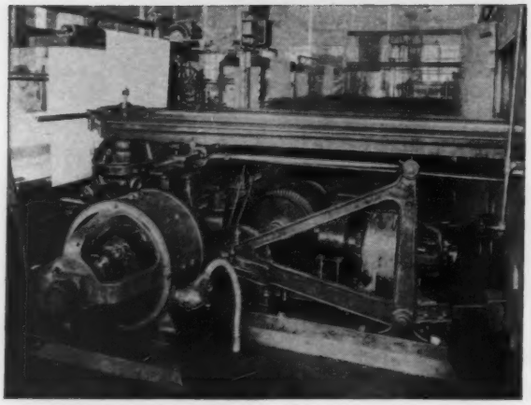
VELVEEN XX STARCH
HAWK THIN BOILING STARCH
SILVER MEDAL PEARL STARCH
R. A. POTATO STARCH
N. F. PEARL STARCH
N. F. POWDERED STARCH

STEIN, HALL & COMPANY, INC.
EST. 1866
285 MADISON AVENUE NEW YORK CITY
BOSTON PROVIDENCE CHICAGO PHILADELPHIA CHARLOTTE SAN FRANCISCO
TORONTO ROCHESTER BUFFALO LOS ANGELES

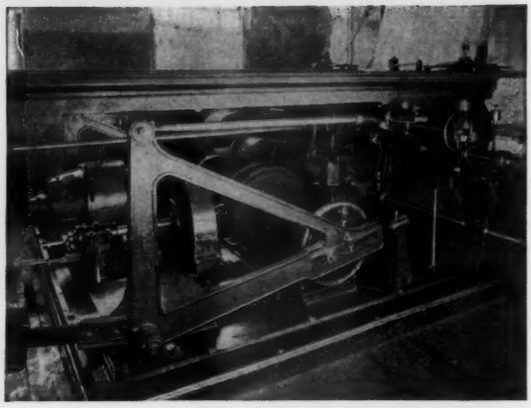
HEADQUARTERS FOR ALL TEXTILE STARCHES, DEXTRINES, GUMS AND TAPIOCA FLOURS

THE POWER YOU WANT... DIRECTLY APPLIED

THE SPEEDS YOU WANT... EASILY CONTROLLED



These three Winsor & Jerauld 90-ft. Tentering Machines are a part of 4-unit ranges. 15 hp., 1620-320 r.p.m. motors are used for driving the clips; 5 hp., 1350-450 r.p.m. motors for the swing motion.



Delivery end of Winsor & Jerauld Swing Tenter. Clips are driven by a 15 hp., 1600-400 r.p.m. Reliance Motor; the swing motion by a 5 hp., 1350-450 r.p.m. motor. A 1½ hp. motor is used for the chain expander.

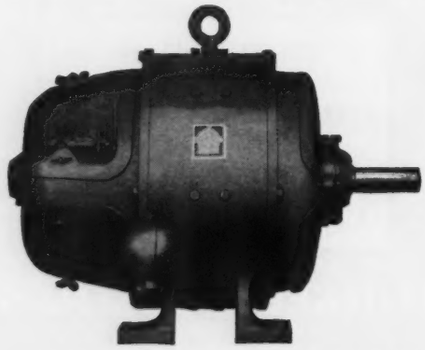
The 15 hp. motor driving the clips, operates in tandem with a 7½ hp. motor on a starch mangle.

RELIANCE MOTOR-DRIVES *for* TENTERING MACHINES

RELIANCE motor-drive brings to the user of these tentering machines the advantages of a combined power unit and speed-changing device. Power gets to work quickly through positive direct drives. It is easily and safely controlled to suit all conditions that influence good finishing results.

The compact drives save space and keep a clear overhead. Few parts, between power and work mean low maintenance.

With these flexible drives it is easy to combine tenters in range with other processing equipment.



Semi-enclosed Type T Heavy-duty Reliance Motor with ball bearings.

RELIANCE A·C D·C MOTORS

RELIANCE ELECTRIC AND ENGINEERING COMPANY
Ivanhoe Road, Cleveland, Ohio

Branches: Birmingham : Boston : Buffalo
Chicago : Cincinnati : Detroit : New York
Philadelphia : Pittsburgh : Washington
Representatives in other principal cities

Armour's Neutral Olive Chips

Other Famous ARMOUR Textile Soaps

Flint Shredded Chips
Industrial Chips
Topaz Chips
Pure Palm Chips
Pure Palm Solid
Blended Palm Solid
Texscour
Neutral Olive Powder
Olive Oil Solid
Olive Oil Bars
Olive Fig Soap

For silk soaking or degumming; for wool scouring, dyeing and lightweight finishing; for cotton and rayon scouring, dyeing and finishing, Armour's Neutral Olive Chips has long held the spotlight of approval. Armour's Neutral Olive Chips possess Built-in Quality, Performance, Uniformity, Economy—and above all, Safety.

Uniformly high quality of Armour's Textile Soaps is not accidental! Choice, selected raw materials—proven tested manufacturing processes—and strict laboratory control, combine to produce soap products of unusual merit.

What more could you desire—unless it were positive assurance of immediate and efficient delivery service? Armour and Company's 400 branches, covering every section of the entire country, are your guarantee of prompt delivery from a convenient source of supply.

Just drop a note or call our nearest Branch for samples and full particulars.

INDUSTRIAL SOAP DEPARTMENT
ARMOUR AND COMPANY
1355 W. 31st STREET • CHICAGO, ILLINOIS

THE MOST Amazing VACATION EVER CONCEIVED

WE mean that—"the most amazing vacation ever conceived". It is a challenging statement. It has been challenged . . . and PROVED to the satisfaction of thousands of our guests during the past three years. No hotel in the world provides such a wealth of things-to-do . . . in short, a COMPLETE VACATION as well as a complete hotel.

What are your vacation whims? Mother likes bridge and sun baths. Daughter likes moonlit terraces, swimming and dancing. Son wants to keep up his tennis and enjoy early morning canters on a spirited horse. Dad wants to do some deep-sea angling and wear down his waistline with golf. All your hobbies and sports are found at their best in the Miami Biltmore—and more!

Nowhere else will you find such a variety of interests . . . such magnificent settings and conveniences for enjoying them . . . such unusual economies . . . and such extraordinary privileges as are embraced in the Miami Biltmore plan.

As guest of the Miami Biltmore, you automatically become a member of the famous Florida Year-Round Clubs which include the Miami Biltmore Country Club, adjoining the hotel; the Roney Plaza Cabaña Sun Club, on the ocean front at Miami Beach, and the Key Largo Anglers Club, a picturesque lodge with private cottages, on the Florida keys, in the teeming center of the world's best sport fishing waters.

Whenever you wish to enjoy these pleasures and others beyond the hotel estate itself, you will have luxurious aerocars to take you there and bring you back. Or, if you would skim safely across sunny skies, to the Beach—an autogiro will lift you over in a few minutes. Or you may want the thrill of speeding down Biscayne Bay in a sea-sled.

All these privileges are yours **without extra cost**, when you are a Miami Biltmore guest . . . unique courtesies that are not available anywhere else. The economy in transportation alone will save you almost the amount of an average hotel bill in costs of "getting around" this vast playground.

If you're a golfer, you will want to play in golfdom's winter headquarters, because here at the Miami Biltmore is one of the South's finest courses, with FIVE nationally celebrated stars on the teaching and playing staff: Olin Dutra, National Open Champion . . . Paul Runyan, National P. G. A. Champion . . . Louis Costello . . . Mike Brady . . . and Ned Everhart. During the winter the Miami Biltmore schedule provides a big golf event almost every week . . . tournaments of national interest, bringing the country's best players . . . hard fought contests that inspire as brilliant play as in the annual Miami Biltmore $12,500 Open. Greens and fairways are carefully groomed to championship condition . . . and the clubhouse is one of the most beautiful in the United States.

For your morning dip . . . gay splashing and luxurious sun-loafing . . . there is the vast outdoor pool, under your bedroom window . . . with tiled terraces, sandy beach and paraphernalia for aquatic sports. Weekly water carnivals are staged here . . . with the world's best swimmers and divers, in exhibitions and exciting competitions. When you want surf bathing, there's the Roney Plaza Cabaña Sun Club at Miami Beach . . . with rapid conveyances to take you there.

Tennis fans at the Miami Biltmore have the privileges of four hard surfaced championship courts . . . where spectacular tournaments are played . . . and where Joseph B. Maguire, the resident professional, will advise you on your game.

Equestrian activities are also a major part of "the most amazing vacation ever conceived". Our stables have a wide selection of mounts . . . spirited five-gaited steppers of splendid conformation or gentle ponies for the children. There's a field for jumpers. Along thirty miles of bridle trails, winding through the tropic countryside, Biltmore guests canter daily. Group rides include moonlight rides, horseback breakfasts and treasure hunts.

When you feel the urge for a tussle with any of the 600-odd fish that swim these warm waters . . . hop into an aerocar or sea-sled and spend a few days at the Key Largo Anglers Club. There are angling tournaments, chowder parties and other merry events, which you, as a Biltmore guest, are privileged to enjoy.

For your social moods there is always some stimulating amusement at the Miami Biltmore . . . two popular society orchestras . . . tea dances . . . dinners . . . supper club revues with Broadway or Hollywood stars . . . musicales . . . and art exhibitions . . . bridge tournaments of national importance, as well as daily play, afternoons and evenings—with Mrs. Mildred Archer, Biltmore bridge director, to advise you . . . and scores of other happy diversions that will make this the gayest adventure you've had in years.

This year, more than ever, the Miami Biltmore emphasizes excellence and variety in cuisine. An innovation is the Cafe of Nations . . . dining places typical of France, Italy, Spain, Germany and Switzerland, arranged on outdoor terraces where tasty dishes of each country are served. The usual epicurean delights await you in the main dining room, of course.

Consider this Miami Biltmore vacation plan. Investigate it fully. Ask friends who have taken advantage of it . . . and we feel sure you will want to frolic in "The Center of the Wintertime World".

Write or wire for Literature, Information — Reservations

MIAMI BILTMORE

CORAL GABLES, MIAMI, FLORIDA

CENTER OF THE WINTERTIME WORLD

PROFITABLE IN 4 WAYS

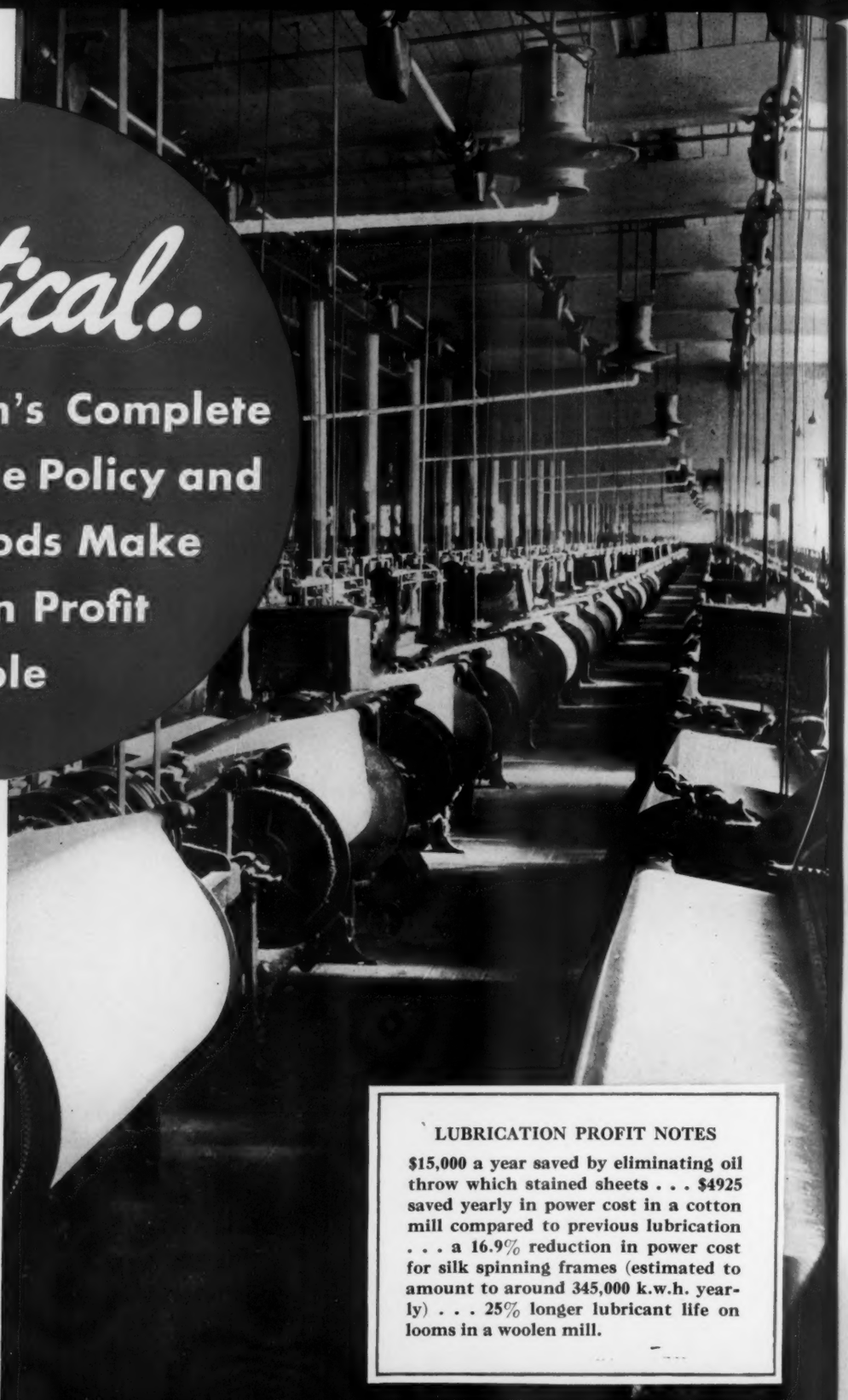
THE SUM OF THESE FOUR SAVINGS

1. REDUCED POWER CONSUMPTION
2. MORE CONTINUOUS PRODUCTION
3. DECREASED MAINTENANCE
4. LOWER LUBRICATION COSTS

= LUBRICATION PROFIT

SHOW A LUBRICATION PROFIT IN YOUR PLANT WITH SOCONY-VACUUM'S HELP

See Next Page



Practical..

Socony-Vacuum's Complete Line, Progressive Policy and Tested Methods Make Lubrication Profit Possible

WITH A REALLY complete line of industrial lubricants—including Gargoyle brands, the world's leading first-quality lubricants—Socony-Vacuum can always supply the *right oil* for the service, whatever the requirement.

The controlled use of these high-quality Gargoyle lubricants almost always pays for itself many times over. However, where the service does not justify the highest-grade lubricants, the established Socony-Vacuum policy is to recommend the lowest-priced lubricant consistent with true economy.

And to aid you in making a Lubrication Profit, Socony-Vacuum's Engineering Service puts at your disposal the results of 69 years' lubrication experience, constantly brought up-to-date by direct cooperation with hundreds of makers of new equipment. Socony-Vacuum holds the largest collection of lubrication data in the world today.

LUBRICATION PROFIT NOTES

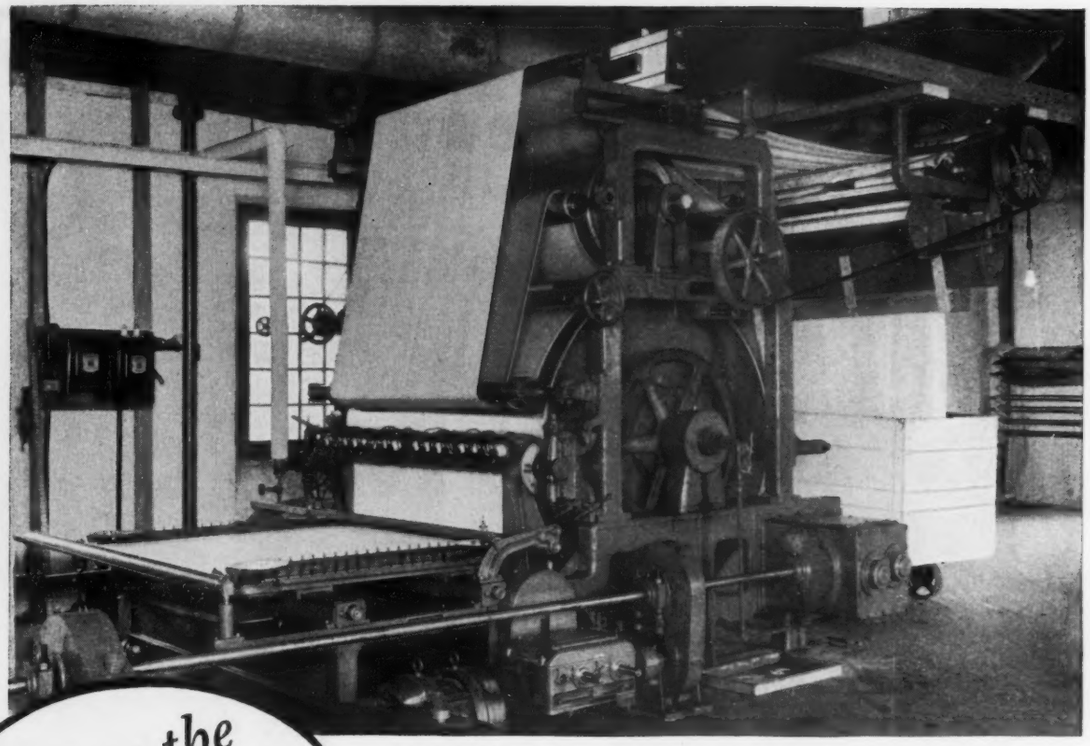
$15,000 a year saved by eliminating oil throw which stained sheets . . . $4925 saved yearly in power cost in a cotton mill compared to previous lubrication . . . a 16.9% reduction in power cost for silk spinning frames (estimated to amount to around 345,000 k.w.h. yearly) . . . 25% longer lubricant life on looms in a woolen mill.

SOCONY-VACUUM OIL CO

INCORPORATED

STANDARD OIL COMPANY OF NEW YORK • VACUUM OIL COMPANY • WADHAMS OIL COMPANY
WHITE STAR REFINING COMPANY • LUBRITE REFINING CORPORATION • WHITE EAGLE OIL CORPORATION
MAGNOLIA PETROLEUM COMPANY • GENERAL PETROLEUM CORPORATION OF CALIFORNIA

GARGOYLE
Lubricants



This blanket finishing unit of the BUTTERWORTH SANFORIZER, built by H. W. BUTTERWORTH & SONS CO., PHILADELPHIA, is typical of the variety of textile equipment served by Hyatts. In this machine large Hyatt Roller Bearings carry the load of the main and blanket cylinders.

Putting the RIGHT BEARING in the RIGHT PLACE

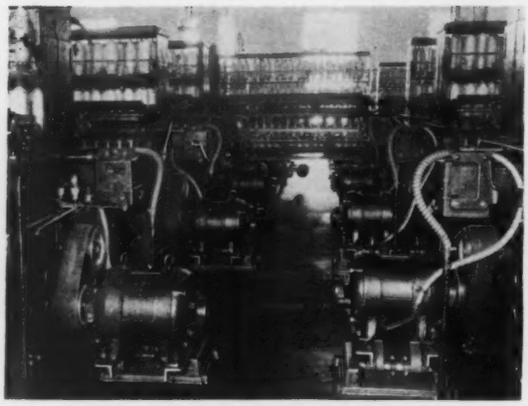
Employed at strategic points Hyatt Roller Bearings keep things running smoothly. They are designed specifically to solve the problems of speed, load, wear and the steady grind of uninterrupted operation.

For over 40 years these better bearings have made this important contribution to the building of better mechanical equipment. And this long and successful association with the country's principal industries has enabled us to accumulate authoritative knowledge of all forms of bearing requirements.

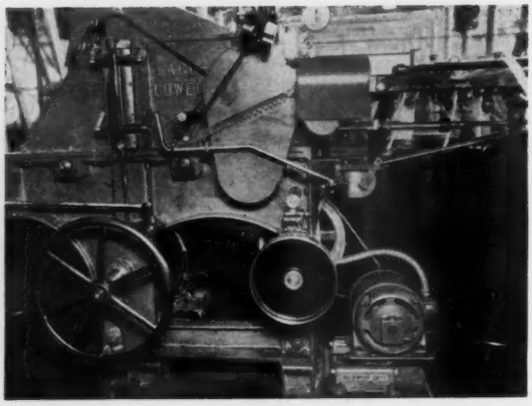
So closely have Hyatt engineers worked with and on all kinds of machinery development that many times their help has gone farther than bearing application design. That is how and why Hyatt Roller Bearings serve so extensively and so well. Hyatt Roller Bearing Company, Newark, Detroit, Chicago, Pittsburgh, Oakland.

HYATT
ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

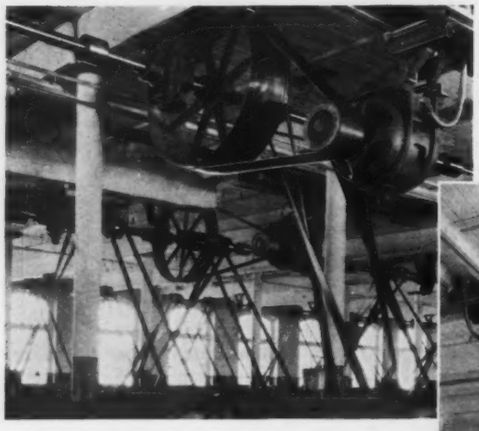
The Preference for ROCKWOOD Drives Is Steadily Growing



Spinning Frame drives—Superior Yarn Mills, Mt. Holly, North Carolina, using ROCKWOOD floor-type motor bases.

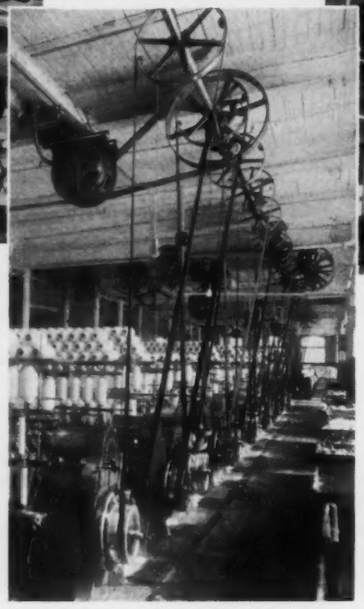


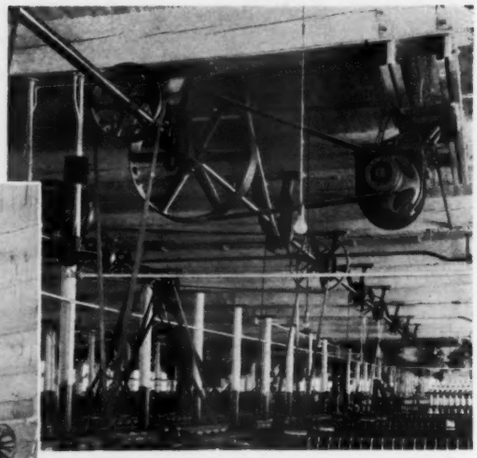
ROCKWOOD Drive to Sliver-lapper—Erwin Cotton Mills, Cooleemee, N. C. More than 100 ROCKWOOD Drives in this mill.



ROCKWOOD ceiling-type drives to Cardroom lineshafts. 60 H.P. motors.

BELOW — ROCKWOOD ceiling-type drives to lineshafts in a large Virginia cotton mill.





ROCKWOOD ceiling-type drives to spinning frame lineshafts. 60 H.P. motors.

More and more textile mills are turning to ROCKWOOD pivoted-motor drives to get maximum machine capacities and to reduce drive maintenance.
Mill engineers comment on the smooth, dependable performance of these drives, and the high *sustained* power-transmitting efficiency resulting from their *automatic* control of belt tension.

Before you change any drives in your mill—either for lineshafts or for individual machines — investigate the money-saving advantages of ROCKWOOD Drives.
Remember, there is no drive superior to a flat belt drive, operating under *controlled* tension. ROCKWOOD engineers will gladly make practical recommendations for improving any of your drives—without obligation.

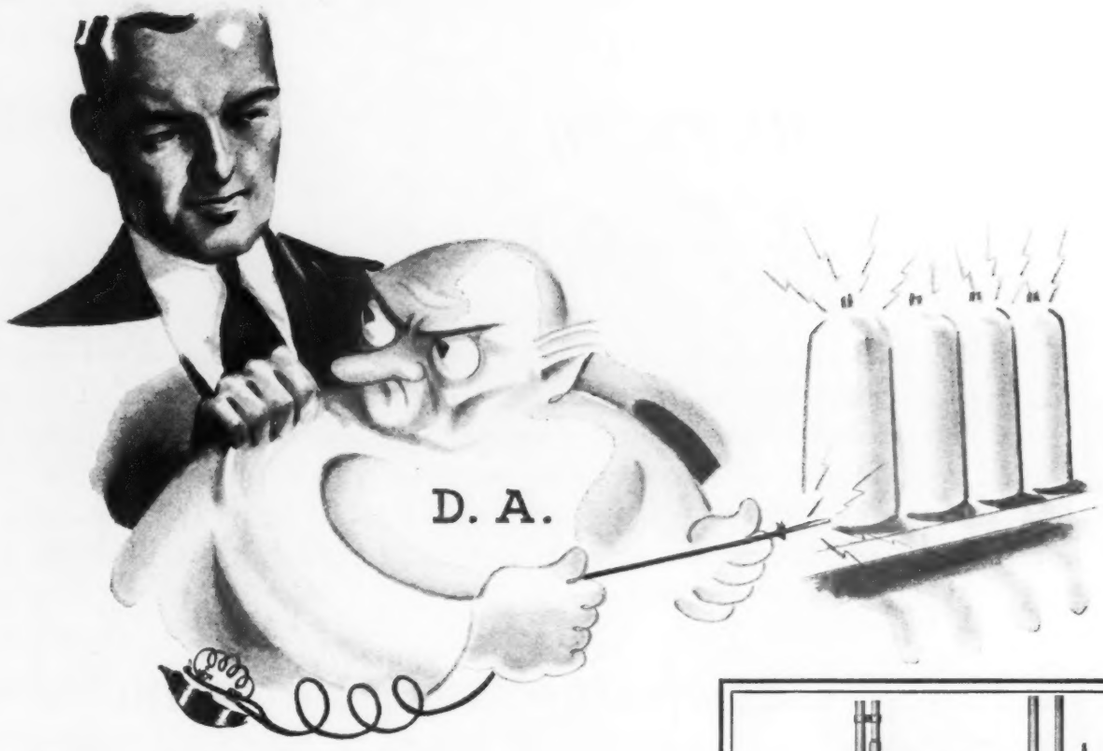
SEE OUR EXHIBIT AT THE SOUTHERN TEXTILE EXPOSITION —APRIL 8 TO 13

ROCKWOOD DRIVE
SHORT-CENTER FLAT BELT

DEALERS WITH WAREHOUSE STOCKS IN ALL PRINCIPAL CITIES

THE ROCKWOOD MANUFACTURING COMPANY, INDIANAPOLIS, INDIANA

Division of General Fibre Products, Inc.



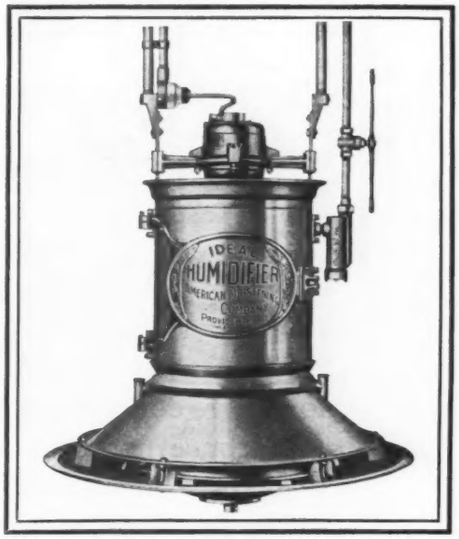
D. A.
DRY AIR

ENEMY No. 1 OF PRODUCTION

Static electricity is one of the favorite weapons of Dry Air against even, satisfactory production. Its ill effects disappear immediately with the presence of Adequate Humidification.

Adequate Humidification is a technical engineering problem involving many and varying factors which only specialists can handle.

For over 47 years AMCO engineers have solved the problem of Adequate Humidification in a manner which makes AMCO engineering and AMCO equipment outstanding in their leadership.



AMCO

IDEAL HUMIDIFIER

Practical humidification experience and extensive engineering research produced this long service Humidifier. An efficient and practical head for humidifying, air washing and cooling.

Catalog describing this and other AMCO Humidifiers readily available.

IF IT'S A PROBLEM OF HUMIDIFICATION CALL IN THE AMCO ENGINEER

AMERICAN MOISTENING COMPANY

Established 1888

ATLANTA, GA. BOSTON, MASS.

PROVIDENCE, RHODE ISLAND

CHARLOTTE, N. C. GREENVILLE, S. C.

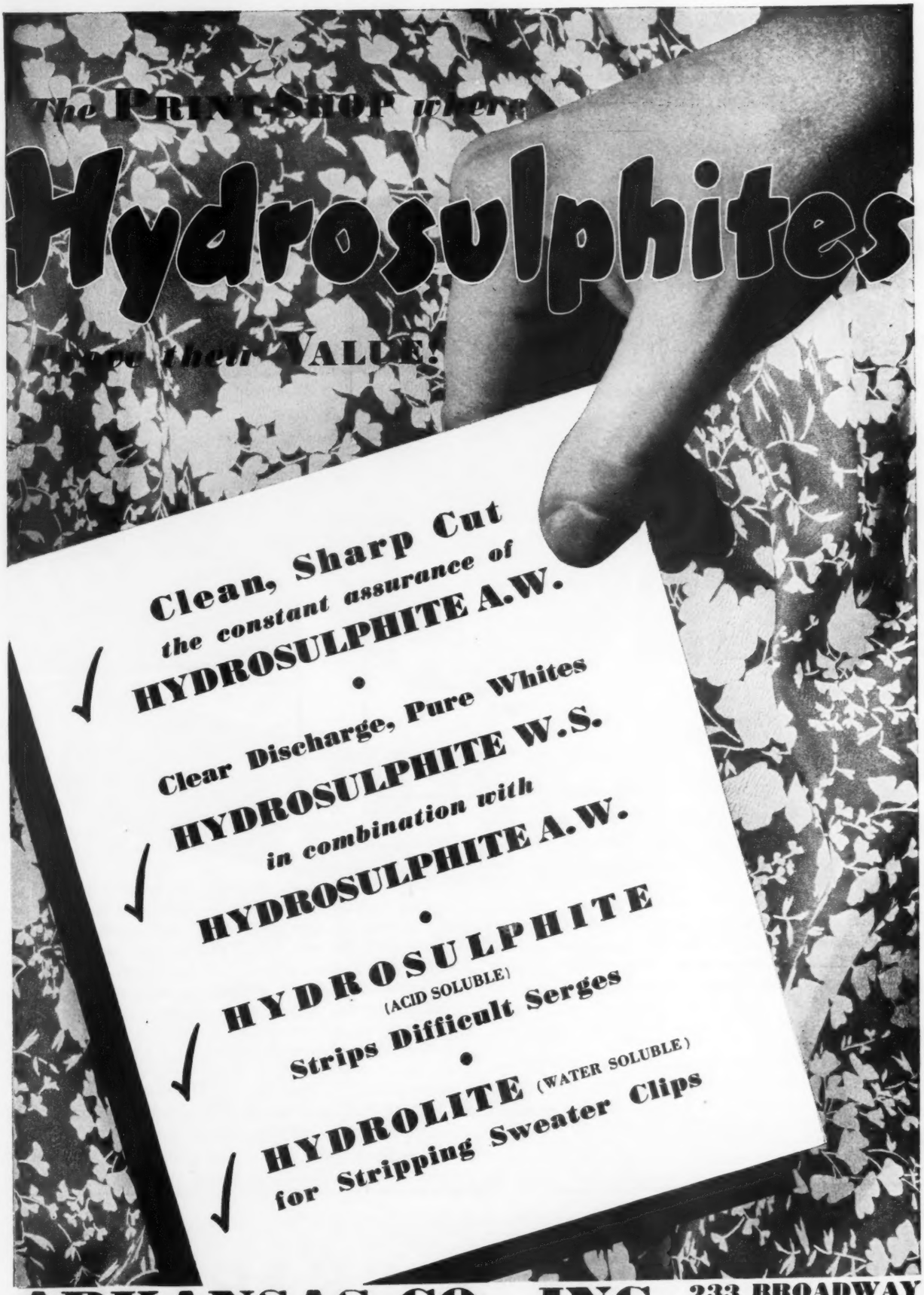
The American Business Paper

ONE of the vital reasons for the tremendous commercial development in the United States is the American business press. The American business man, manufacturer, wholesaler or retailer, is presented each month with a veritable encyclopedia of information in his chosen field. To the schools of America, and the daily press, as instruments of democratic education must be added our business press with its specialized service.

Consider these features of well-conducted business papers, and their influence on the development of business technique

- - - NEWS which, in the business paper, means the presentation of all angles of controversial matters; the rapid dissemination of information about new or improved products; the spread of knowledge concerning shifts in personnel in an industry, so important to all concerned; the exhaustive studies of conditions and trends which show in what directions industry is moving; the co-relation of specific developments in an industry with general movements in business; the technical information which, in any one issue of a competent business paper, might amount to as much as an individual could hope to gather in a lifetime; and over and above all this detailed material is the editorial comment, sifting, comparing, commenting, searching out the basic elements, organizing the mass of news and information into compact, usable generalizations.

The American Business Paper is one of the evidences of America's willingness to learn. Like its widespread system of democratic education, the Business Paper serves an industry's need for impartial information, placing at each reader's command the same accumulation of data, for such use as he may make of it.

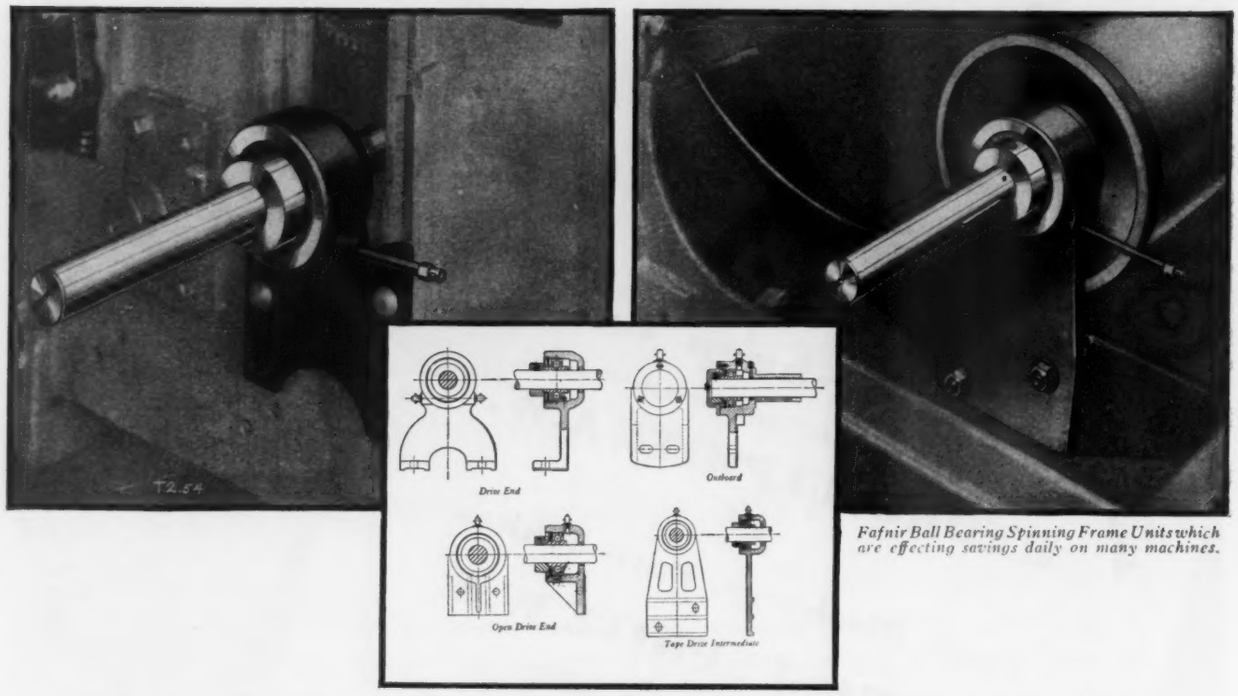


ARKANSAS CO., INC. 233 BROADWAY NEW YORK

CLEANLINESS . . .

a symbol of low maintenance . . . with

FAFNIR-EQUIPPED SPINNING FRAMES AND TWISTERS



Fafnir Ball Bearing Spinning Frame Units which are effecting savings daily on many machines.

The only attention spinning frame cylinders require when they are Fafnir-equipped is lubrication by grease about four times a year. This not only means that maintenance costs are cut to practically nothing, but the danger of soiling yarn with spindle-oil is avoided.

Fafnirs minimize wear and vibration in the bearings, resulting in longer life for tapes, cylinders and the entire frame. Friction, too, is reduced by eliminating slippage, and relieving the motor gives higher and more uniform spindle speeds. Since time-out for repairs is virtually eliminated, production is materially stepped up.

Specify Fafnir Ball Bearings on your new frames. But meanwhile you can also replace your old cylinder bearings with Fafnirs, for they are very easy to apply. The inner rings are bored to inch dimensions, and fit standard shafts firmly by means of the self-locking collar, without necessity of lock-nuts, shaft shoulders and special adjustments.

Increased cleanliness, efficiency and lowered maintenance are only a few of the economies that some of the country's largest mills have experienced with Fafnir Ball Bearings — and that are just as available to you. And not only for spinning frames but also for every one of the 63 machines through which the cotton fiber may pass in its processing. Consult any Fafnir representative—or stop in at Booth 472 at the Textile Show—for complete details . . . THE FAFNIR BEARING COMPANY, *New Britain, Conn. Representatives also at*: Atlanta, Ga. . . . Houston, Texas . . . Charlotte, N. C. . . . Boston, Mass. . . . Dallas, Texas . . . Birmingham, Alabama.

Safeguarding Quality

FAFNIR BALL BEARINGS

The New and Improved

PIGMENT WHITE

A WHITE THAT IS WHITE

● You can forever banish dull grayish whites with our new snow-white pigment now available in either paste or powder form. It is prepared for use with any natural gum, starch or starch-tragacanth thickener, for printing synthetics, silk, cotton and wool.

PIGMENT WHITE W-793 H is a smooth paste, entirely free from grit. Its highly suspended pigments give a free-flowing body to the printing paste and its greater covering power guarantees brilliant whites.

MONOCHROME is the fine, highly pulverized, fluffy powder form of pigment white.

Both the paste and powder mix thoroughly with any other printing ingredient and will not stick in the engraving.

FREE—Write today for your free samples. Make the thumb and finger test—prove to your own satisfaction that these new pigment whites are free from grit and will give you the whitest whites you have ever printed.

JACQUES WOLF & CO.

MANUFACTURING CHEMISTS AND IMPORTERS . . . PASSAIC, NEW JERSEY

Warehouses: **Providence, R. I., Philadelphia, Pa., Utica, N.Y., Chicago, Ill., Greenville, S.C., Chattanooga, Tenn.**

YOU WOULDN'T TAKE A BATH IN YOUR UNDERWEAR . . .

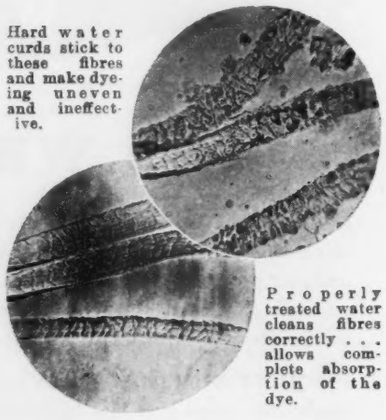
• Soap and suds would waste their vigor on the balbriggans, and hardly touch your hide! So why try to dye fibres that are coated with hard-water curds? Fibres can and are being dyed in spite of this coating . . . but the dyeing is streaky and dull, and lowers the quality of the finished goods.

Even natural "soft" water will not prevent splotchy dyeing, because practically *all* supply water contains dissolved compounds of calcium and magnesium, the "hard" elements in water. These compounds make sticky, insoluble curds when mixed with soap . . . and the curds adhere to the tiny fibres of cotton, silk and wool so that, in dyeing, the dye is not evenly and completely absorbed. Result: the finished goods are dull and unattractive.

Has your mill water been tested lately? Most water supplies vary in hardness and purity from day to day and from season to season. Our researches show that practically all natural mill waters must be properly coagulated, filtered, softened and perhaps even further treated to enable finished goods of high quality to be produced.

Over a thousand mills are now using Permutit Water Treating Equipment. They make these savings: fewer reruns and rejections; less soap, soda and bleach; reduced boiler tube repairs and replacements; and less yarn breakage. In addition, the finished goods have a full all-over color and are very much smoother to the touch. These are worthwhile savings . . . many of the mills have paid for Permutit equipment within two years' time through soft water economies.

We will gladly make a free survey of your mill and recommend proper water treatment. Write for our booklet, "Reducing Textile Costs and Troubles," and see how Permutit can help you. The Permutit Company, 330 West 42nd Street, New York.



Hard water curds stick to these fibres and make dyeing uneven and ineffective.

Properly treated water cleans fibres correctly . . . allows complete absorption of the dye.

Ask About the New Zeolite

Super-Zeo-Dur has been perfected after years of testing. It saves you salt, and at the same time provides an extra reserve capacity. Write for full information about the economies you can effect by refilling your present equipment.

Permutit

Water Treating Equipment

RAPIDASE

THE ENZYMATIC *All-purpose* DE-SIZING AGENT!

FOR COTTONS · RAYONS · AND MIXED GOODS

DYEING
•
BLEACHING
•
and
FINISHING

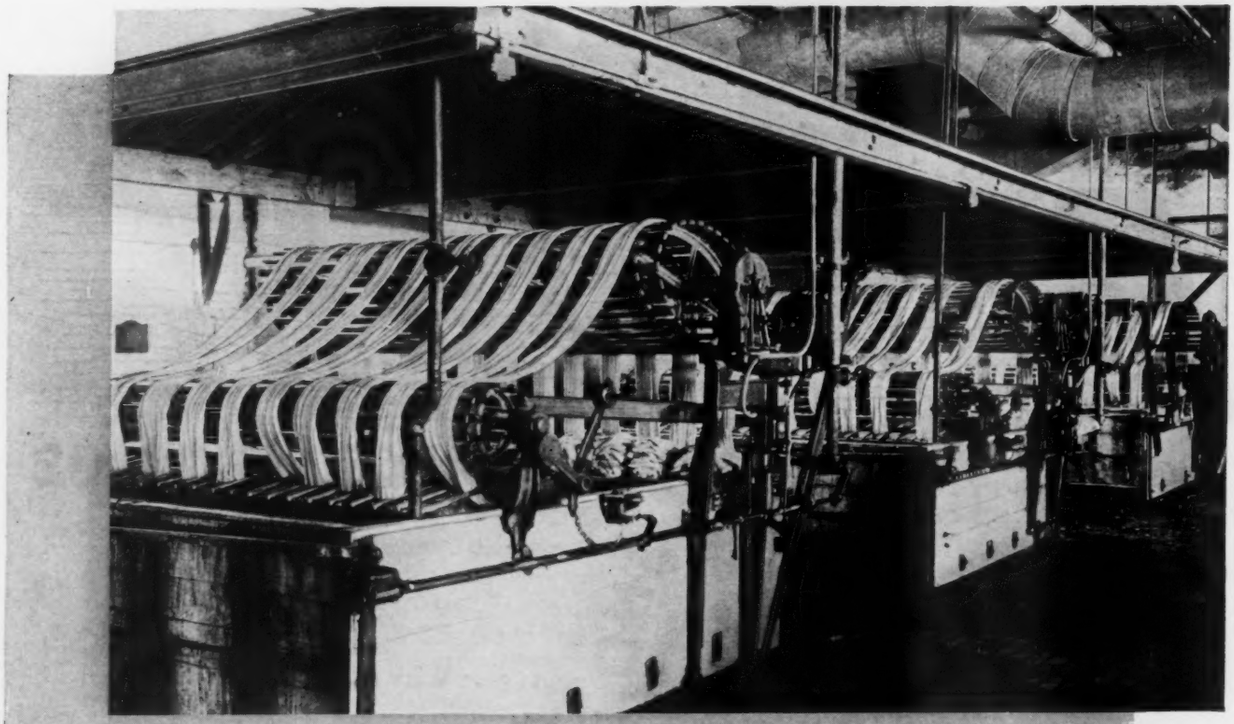
. . . Why make the preparation of piece goods for dyeing, bleaching and printing a costly and hazardous process?

. . . The use of Rapidase assures complete removal of sizing quickly, safely and at extremely low cost.

WALLERSTEIN CO.
INCORPORATED
171 MADISON AVE.
NEW YORK CITY

MONEL METAL

...FOR PEROXIDE BLEACHING



A battery of three Monel Metal lined peroxide bleaching machines in the plant of Montreal Cottons, Ltd., Valleyfield, Quebec. These machines are used for peroxide bleaching only, and have been in service longer than two years.

"O. K. IN EVERY RESPECT" REPORTS USER AFTER 2 YEARS

The advantages of peroxide bleach have not been fully realized in many mills because of a lack of suitable equipment for carrying on the bleaching process.

That this is not the case in the plant of the Montreal Cottons, Ltd., Valleyfield, Quebec, is demonstrated by the following report from Mr. G. E. Aird, Manager, who says of his Monel Metal lined peroxide bleaching machines, "They have been in use more than two years and are satisfactory in every respect."

You probably ask, "Would Monel Metal equipment handle peroxide bleaching operations on other textiles?" Yes... silk, wool and rayon as well as cotton.

Then, "Is Monel Metal affected by alkaline peroxide solutions?" The answer is NO.

Another query: "But is the necessary equipment complicated?" Not at all. The Valleyfield installation was made by the company's own workmen. Where large, self-supporting tanks are desired Nickel-clad Steel affords the required structural strength. Monel Metal, on the other hand is ideal for lining bleaching tanks, and lends itself perfectly to such use.

"Does the Monel Metal affect the stability of the bleaching solutions?" It is well known that certain metals used in the construction of bleach house apparatus catalyze the decomposition of the bleach thereby causing loss of bleaching effect. That Monel Metal and Nickel are not among these metals has been demonstrated by laboratory tests and practical experience. In support of this, we refer to the satisfactory experience of present users and the following quotation from a letter received from a leading manufacturer of hydrogen peroxide: "We have subjected Monel Metal and Nickel containers to a long series of tests in conjunction with bleaching textiles, and we find both metals extremely satisfactory for use in hydrogen peroxide bleaching. Both have stood up wonderfully throughout the tests and an excellent factor as to their suitability for bleaching is their *non-oxidizing properties*."

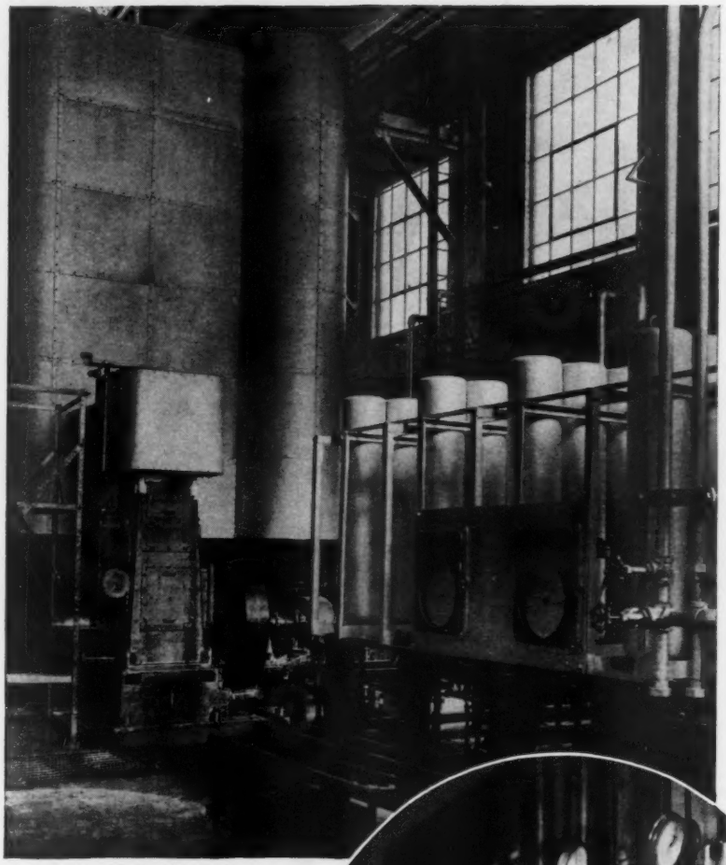
Your last question might well be: "Are there any special precautions to be observed in Peroxide Bleaching?" We can best reply to this by suggesting that you send for copy of Technical Bulletin TS-3 which contains brief practical information covering the use of Monel Metal in peroxide bleaching. Send for a copy, today.

• • •

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York, N. Y.

THE *NEW* 100% PENNSYLVANIA Gulfpride Oil IS *ALCHLOR* PROCESSED!



Liquid air is distilled in the tall insulated fractionating tower for separation into oxygen and nitrogen. The engine in front of the tower assists in the liquefaction of air prior to its fractionation for the ALCHLOR process

This unparalleled motor oil will give you DEFINITE Operating Savings

IN ADDITION to being a 100% Pure Pennsylvania Oil, GULFPRIDE—the world's finest lubricating oil—is super-refined by Gulf's exclusive and patented ALCHLOR process. This remarkable refining process removes 20 per cent more impurities—such as asphaltenes, petroleum resins, naphthenic acids, etc. Finely dewaxed, highly filtered and ALCHLOR processed—GULFPRIDE is an unparalleled motor oil!

GULFPRIDE'S high mileage performance offers truck and commercial car operators astounding savings on a cost-per-mile basis. It smashes all former ideas of low consumption—saves carbon removal expense, gives longest life, and lowers maintenance costs. GULFPRIDE gives the ultimate motor oil economy.

Gulf trained engineers will gladly survey your equipment and submit specific recommendations for economical lubrication.

During every stage of refining GULFPRIDE Motor Oils test samples are withdrawn to be carefully checked in the laboratory by trained Gulf chemists. GULFPRIDE quality is under constant supervision.

Features of the **NEW GULFPRIDE OIL**

1. Double tough lubricating film.
2. High resistance to heat.
3. Low in carbon, gum and sludge.
4. High viscosity index.
5. Low pour test.
6. High mileage.
7. Lowest cost per mile.

GULF REFINING COMPANY
PITTSBURGH, PA.

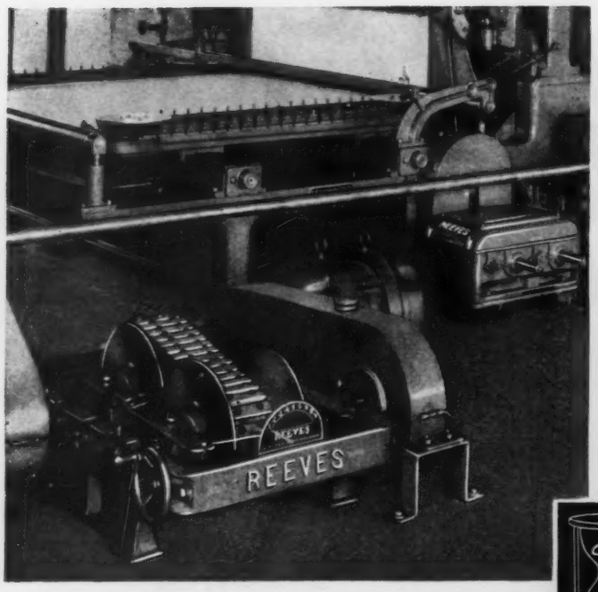
DISTRICT SALES OFFICES: BOSTON · NEW YORK PHILADELPHIA · ATLANTA · NEW ORLEANS HOUSTON · PITTSBURGH · LOUISVILLE · TOLEDO

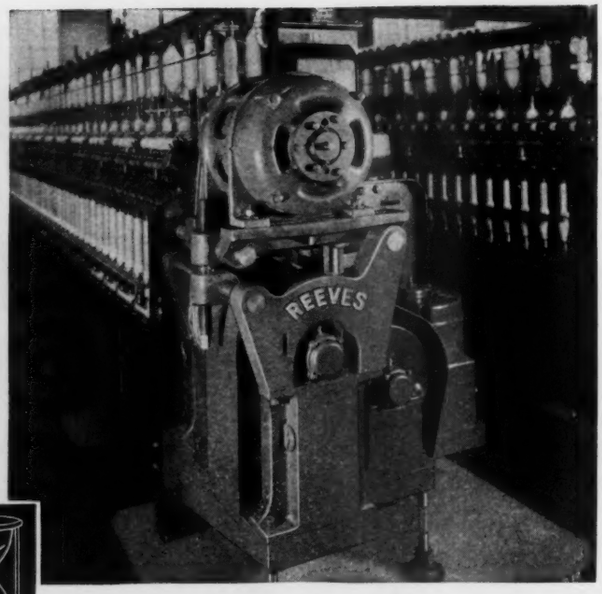
GULF INDUSTRIAL LUBRICATION

GULF REFINING COMPANY, C. 3
3800 Gulf Building, Pittsburgh, Pa.

I would like to have complete information and price quotations on the new Gulfpride Oil.

Name.....
Title.....
Company.....
Address.....





TIME TESTED

SPEED CONTROL for the TEXTILE INDUSTRY

DURING 38 years of exacting service in the textile industry, the REEVES Variable Speed Transmission has become the *rule* for securing *infinite, accurate speed regulation.* . . . More machine builders provide the REEVES as standard equipment—and more plant managers specify the REEVES for modernizing machines in service—than any other speed control unit. . . . The REEVES Transmission gives *any* speed instantly and accurately. It positively *holds* any speed setting as long as desired. Remarkably compact and easy to install. Any type of control—manual, electric-remote, entirely automatic. Complete line of sizes, designs, speed ranges. . . . For specific facts on any type application, write the REEVES engineers. Send coupon below for catalog—a valuable reference book on speed regulation.

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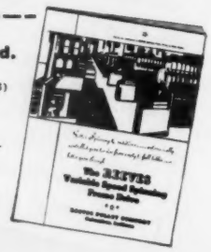

ALEMITE SAVES WHITTIER MILLS 80%

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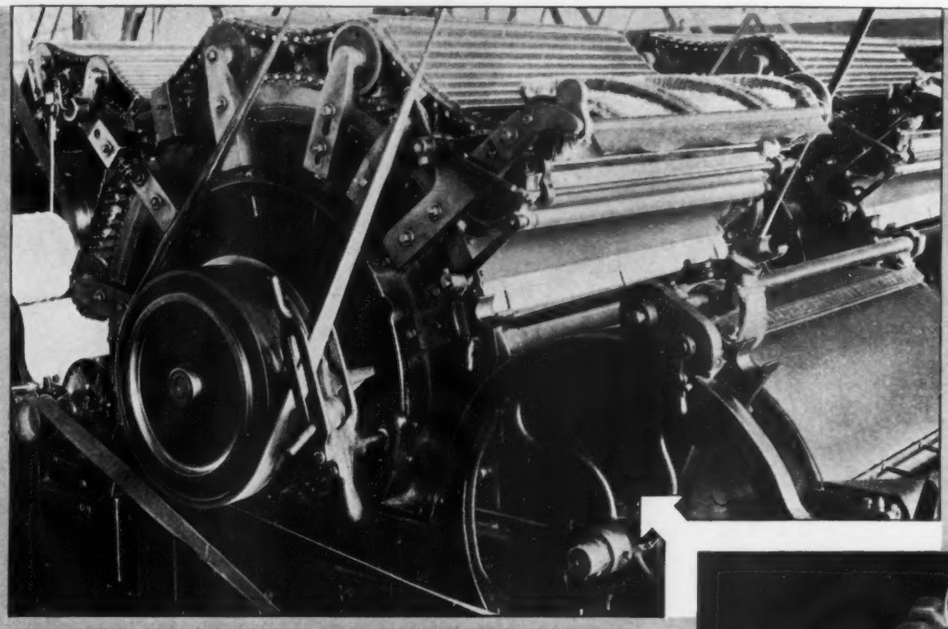
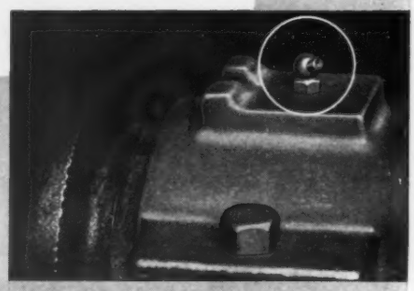


Lowell—1906—Carding Machine operating in Whittier Mills, Chattahoochee, Ga. Formerly required "squirt-can oiling" every 8 hours. *Since installing Alemite, lubrication is required only once every two weeks.*



This picture shows the method of adapting Alemite to the Cylinder Shaft Bearing on the Lowell Carding Machine. Before installing Alemite this bearing required daily oiling. Now it is lubricated only once every 2 weeks. For bearings of this type Alemite Lubrication Engineers recommend Alemite Temprite No. 33 E.P.—a pure, solidified oil that remains plastic—sealing the bearing closure—preventing dust, lint and other drying or abrasive materials from entering along the shaft.

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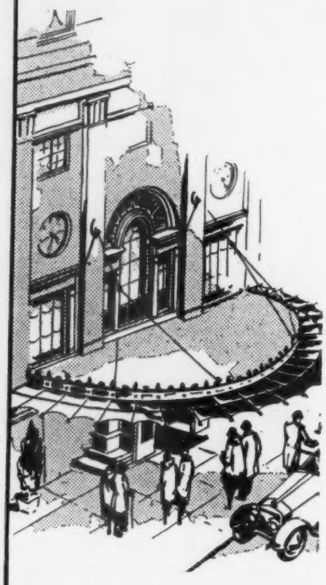

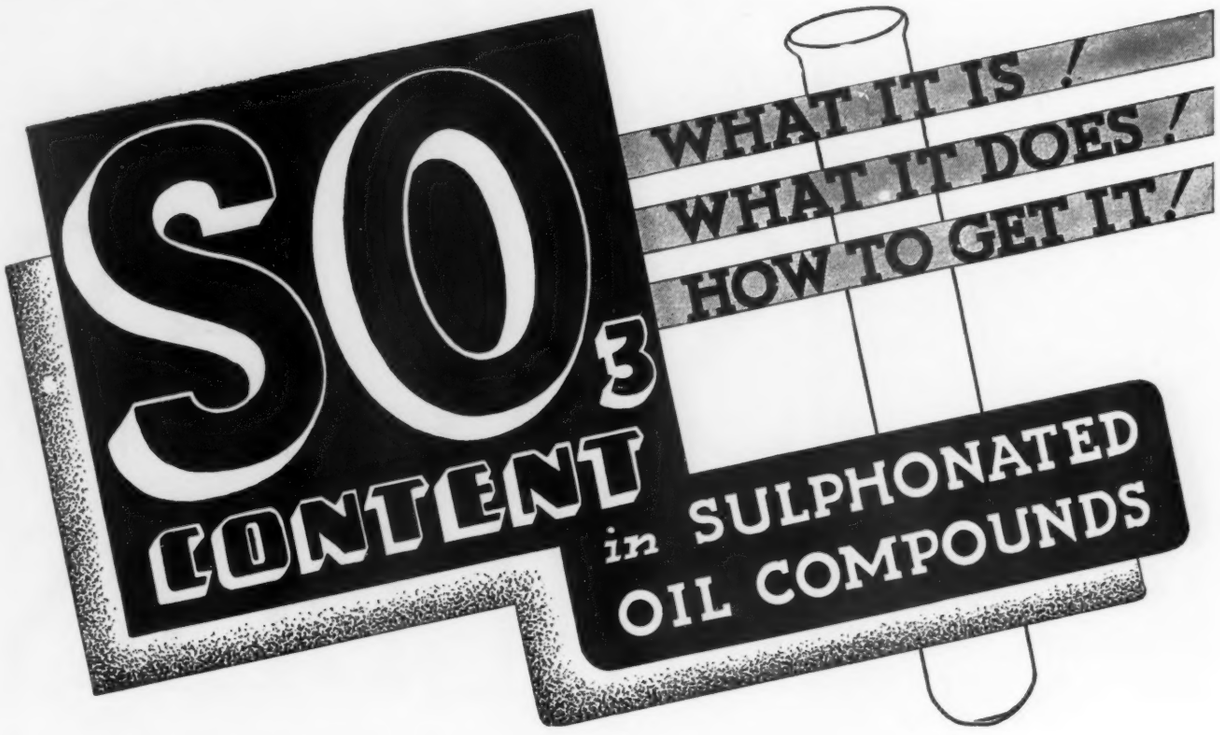

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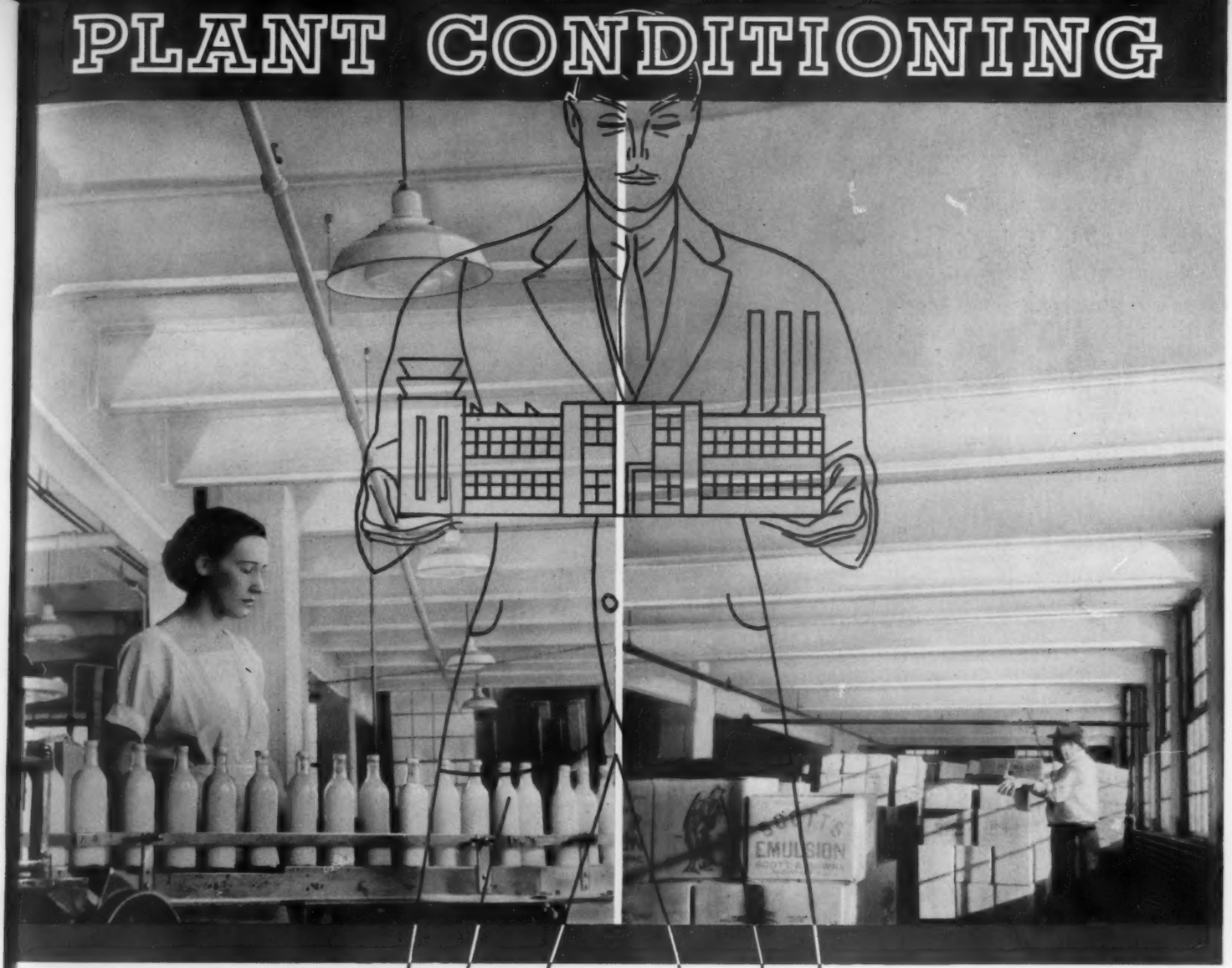

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SAYS ARMCO: "Armco believes not only in maintaining quality in product, but also in maintaining mill buildings and equipment in tip-top condition. The proper painting of interior and exterior surfaces receives most careful study.

"Armco Mills are devoted to the manufacture of special analysis iron and steel sheet metal; and many revolutionary developments designed to improve quality, as well as increase production and reduce manufacturing costs, have been developed in Armco laboratories and mills.

"In this work Sherwin-Williams Paint Engineers have been able to help Armco systematize and standardize our painting in the interest of both appearance and economy. The American Rolling Mill Company has placed painting on a scientific basis. Not only do we consider the effect of color in relation to accident prevention, but we follow the standards which have been developed for painting pipe lines and other mill equipment. We also follow the indexes to color, and the indexes to surfaces to be painted, as well as the standard instructions for the cleaning and painting of surfaces."

ANSWERS

1 Machinery in the lighter colors helps to keep a plant clean.

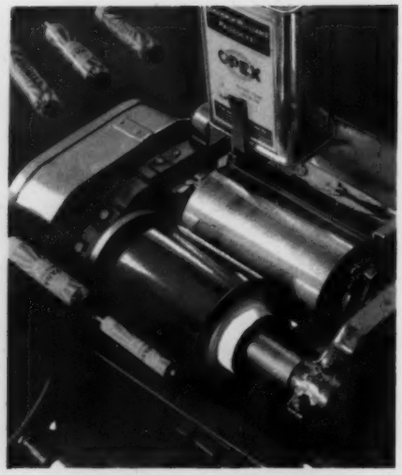
2 Black on yellow is the color combination of greatest visibility.

3 Never wipe a paint brush on the side of a pail. This causes varnishes and enamels to "air bubble", the bubbles later showing as minute specks on the job. It also causes paint materials to dry on the edge of the pail, and the brush will pick up small pieces of dried paint skins and particles of dust that will get on the job.

4 If your eye is experienced in color judgment, you will see that most white paints have a slight bluish cast.

5 One manufacturer painted all trucks, cranes, hoists and other objects that are likely to lead to accidents, vivid red and orange. The colors made them so visible that accidents were reduced.

6 A sight meter in the hands of a Sherwin-Williams Paint Engineer will probably show you how you can save money through better light by proper painting.



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The finish on your tooth paste tube is subject to mighty severe tests. It must withstand bending, crinkling and scratching. It must be resistant to soap alkali, hot water, or chemicals in the medicine chest—a big order for a finish. Sherwin-Williams Opex Tube Lacquer guards that finish which signifies more than a good tube—it bespeaks quality within the tube. Peeling or discoloration would damage the reputation of the product. IPANA depends on Opex Lacquer to maintain the symbol of quality.

From a manufacturing angle Opex Lacquer talks profits. It covers evenly at a mere fraction of paper thickness—which means production economy. Its rapid drying quality overcomes production delay.

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This book will tell you more about paint as an aid to your problems than you've ever read before. Paint as a means to better production and lower unit costs is its message. It is full of interesting data about paint and color in general, and Sherwin-Williams paint engineering service. It is designed to answer your questions about plant conditioning, and to aid you in all plant and maintenance painting. A copy awaits your request.

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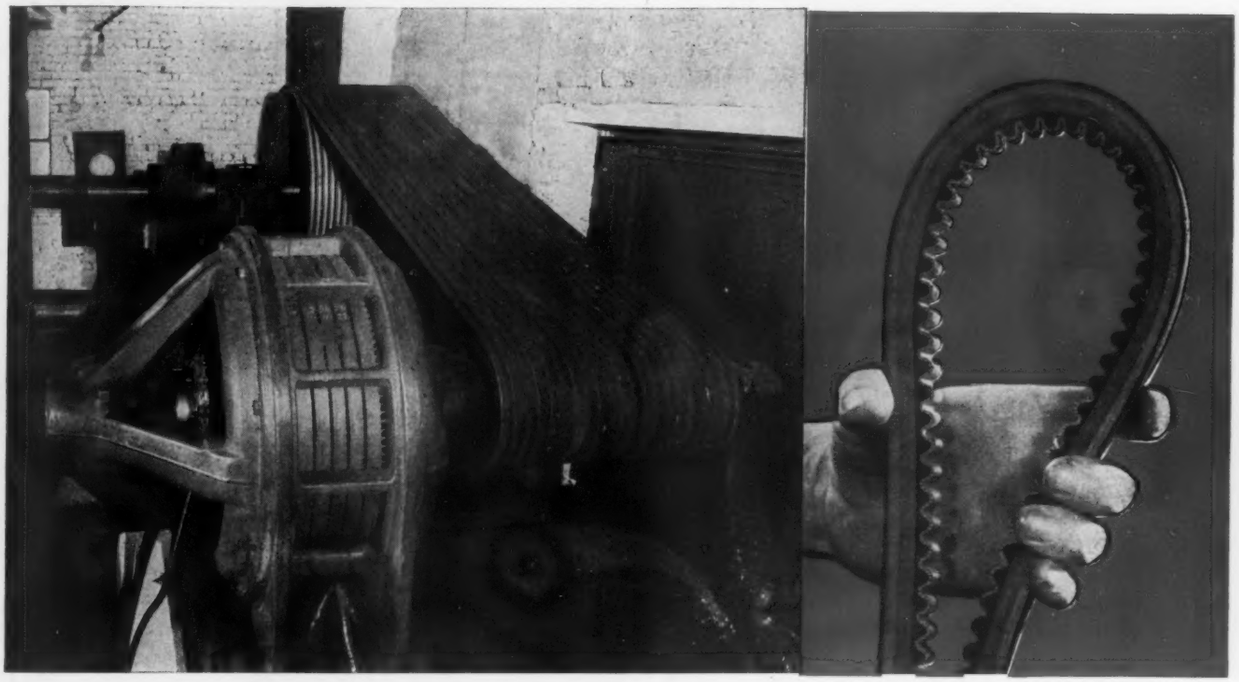

The only V-Belt that is specifically Built-to-Bend. The scientific construction of these belts makes possible the amazing performance of Dayton Cog-Belt Drives

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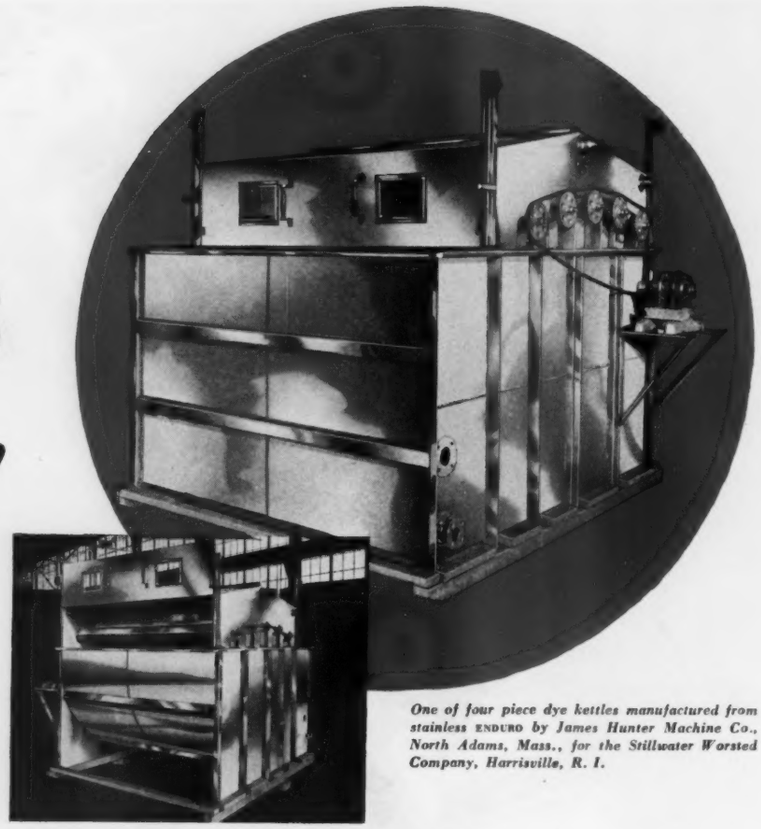

One of four piece dye kettles manufactured from stainless ENDURO *by James Hunter Machine Co., North Adams, Mass., for the Stillwater Worsted Company, Harrisville, R. I.*

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The trial is over. The evidence is all in. The findings have been spread far and wide by those textile engineers who have most carefully determined the qualifications of ENDURO for dyehouse service. The result is that ENDURO is being quickly and widely adopted throughout the textile industry for many dyehouse problems. In these piece dye kettles, for example, ENDURO will prove impervious to the acids of the dye bath. There will be no corrosion, consequently no effect on the color of the dyestuff. And colors can be changed more rapidly, for the hard, smooth surface of ENDURO presents no cleaning problem. All the facts relative to ENDURO'S qualifications and advantages for the dyehouse are available. It will prove profitable to you to have them. Ask Republic to send them today.

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No. 3

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COTTON

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Vol. 99
No. 3

COTTON

March,
1935

Figures Show the Effects of the Code on N. E. and Southern Activity

PERHAPS it was inevitable, but during the month of February there came into the prominence of general newspaper stories and trade publication accounts a number of reports of activity in connection with the cotton-textile code in general, and the New England and southern sections of the industry in particular, which require comment and clarification. At the present writing, late in February, the status is that a group of prominent New England textile manufacturers, at a meeting called by Governor Curley of Massachusetts, committed themselves to the advocacy of a three-point program (to be discussed later in this story), and Representative Martin, republican, of Massachusetts, and Congresswoman Edith Nourse Rogers, Massachusetts republican, have brought the issue of New England and the South into further prominence by securing the appointment of a special board under the NRA "to study conditions in the textile industry and determine the possibility of code revision." A bill has been introduced in Congress, asking for a re-opening of the textile code.

New England's Demands

The genesis of the action of the New England manufacturers appeared to be in a series of advertisements published in Fall River newspapers, stressing the conditions of a competitive character created in this industry by the code provisions as to wages, etc., the AAA processing tax, and other governmental measures, and bespeaking relief for New England mills. Then the conference called by Governor Curley adopted a platform calling for revision of the processing tax, establishment of a 48-hour one-shift week for the industry, and exclusion of products manufactured in foreign countries. This was followed by a similar meeting of Rhode Island manufacturers, called by Governor Green, which promulgated a proposal incorporating similar points, and by a meeting in Washington, late in February, attended by most of the New England governors, and congressmen, and representatives of New England manufacturing companies. The intent of this meeting, as reported, was to fight for the elimination of the wage differential as provided in the code between New England and southern mills. A minimum wage of $13.00 per 40-hour week is provided for New England in the code, with a minimum of $12.00 for southern mills—but Governor Curley, in a statement following the Washington meeting, declared that "the disadvantage accruing to operation of plants in New England due to the wage differential" is "about $2.37 per adult male worker per week."

The Washington conference of New England representatives cited the influence of "production which is in excess of 50 per cent of consumption requirements", and the invasion of American markets by Japan, and the increasing use of competitive fibers, as affecting the health of cotton-textiles. But the primary purpose of the activity was indicated to be the "preservation of the textile industry of New England". The clear inference is that the elimination of the wage differential stipulated as a difference of $1.00 on the minimum wage in the code, but declared by Governor Curley to be in effect a difference of about $2.37 per adult male worker, is demanded as a means to that end.

What the Code Did for New England

In the light of this current activity, it should be of interest to examine into the effects of the cotton-textile code as a whole upon the relative situation in New England and the South, to determine what has been the result, from the standpoint of mill activity, over an extended period following the adoption of the code compared with a similar period prior to the code application.

Taking first the U. S. Government's monthly figures as to cotton consumption, these figures show that for the 12-month period preceding the month the code became effective, the cotton growing states consumed 4,842,339 bales, and that during the 12-month period following the application of the code (or for the year ended June 30, 1934) the cotton growing states' consumption was 4,744,521 bales, a *decrease* of 2 per cent. On the other hand, mills in the New England states consumed, during the same pre-code year, 816,820 bales, compared with 1,023,363 bales for the first code year, an *increase* of 25.3 per cent.

Spreading the periods covered to embrace the 18 months prior to the time the code became effective, and a similar period after the code application, these figures show that:

For the 18-month period from January 1, 1932 to June 30, 1933, the mills in cotton-growing states consumed 6,838,077 bales; and for the 18-month period

from July 1, 1933 to December 31, 1934, the southern mills' consumption dropped to 6,738,869 bales—a *decrease* of 1.45 per cent. For these same two 18-month periods, the mills in New England showed an *increase* of 23.89 per cent from 1,143,839 bales consumed during the 18 months prior to the code, to 1,417,143 bales for the first 18 months under code operation.

The Government's monthly reports on spindle activity are accepted as a reliable index of activity among the several textile manufacturing states and territories. A recapitulation of the active spindle hours operated during the 12-month period ended June 30, 1933, shows that during that time the mills in the cotton-growing states operated a total of 63.27 billion spindle hours, and the mills in New England a total of 15.90 billion spindle hours. A similar calculation for the 12-month period ended June 30, 1934 (approximately one year of operation under the code) shows that the southern mills operated 61.54 billion spindle hours and New England 19.90 billion spindle hours, representing a *decrease* of 2.73 per cent in the activity of southern mills, and an *increase* of 25.1 per cent for New England.

Spindle Activity

Similar calculations applied to cover the 18-month periods preceding and following the application of the code provisions show that for the longer periods, the spindle activity in the South decreased 2.42 per cent, while New England's activity increased 18.77 per cent.

Thus it would seem undeniable that insofar as it represents its part of the country's industry, New England secured from the application of the code provisions greater opportunity for the operation of its spindles than it had had for some time.

Further information is available when the ratio of active spindles to total spindles in place is calculated. For the 18 months ending with December 1931, this figure for the cotton growing states averaged 88.86 per cent, and for New England, 61.94 per cent. For the year and a half ended June 1933, the figures were 87.86 for the South, and 54.51 for New England; and for the 18 months ended December 1934, the figure for the South was 90.39 and for New England, 67.74.

While these figures are interesting with regard to the relative effects of the code from the standpoint of activity, they reveal other significant points which may frequently be overlooked in any viewpoint which considers the two sections as being of equal importance in the whole industry, as regards representation of that industry. The South's consumption of 4,744,521 bales of cotton during the year ended June 30, 1934, represented 74 per cent of the total consumption of the two sections. The South's spindle activity during this same first code year of 61,540,000,000 spindle hours represented 82 per cent of the total activity in the two sections.

The same source of information shows that in January 1935 there were in place in the cotton growing states 19,369,446 spindles. Of these 17,494,428, or 90 per cent, were active during the month. This activity figured out to an average of 286 hours per spindle in place for the month. In New England in January there were 10,423,614 spindles in place, and of these, 6,962,382 or 67 per cent were active, representing 174 hours of operation per spindle in place.

Edwin Farnham Greene is Agent for Borden & Sons

Since the recently negotiated merchandising set-up between M. C. D. Borden & Sons and the Pacific Mills, cotton textile interests in both foreign and domestic markets have been speculating as to the disposition of the Cotton Mills Division of the American Printing Company of Fall River, Mass., one of the best-known mills in the country and a property of the Borden family, pioneers in the manufacture of American textiles.

Whether or not this big producing unit, one of the largest in the world, would be placed on the market at this time, or be held intact until conditions in the field become more settled, has been a matter of interest to many mill men and of consequence to the industry in general, because of the size and importance of the mills.

Edwin Farnham Greene, the agent for sale of this property, states numerous inquiries have been made by interested parties owing to the fact that all machinery and equipment in the mills is registered with the NRA Code Authority of the Cotton Textile Industry.

Another point of interest to mill men is the fact that all of the machinery and equipment now being offered has been used in manufacturing the widely-known percales which for many years have been marketed under the brand name of the M. C. D. Borden & Sons organization.

According to Mr. Greene, plans are being rapidly completed to offer the entire lot of machinery and equipment of the Cotton Mills Division at the Fall River plant. The details of the sale are being conducted for Mr. Greene by McCord, Inc., of New York City. H. W. Campbell, Resident Agent for the sale, together with assistants, will be located on the premises to handle inquiries and inspections.

* * *

Rubber Solvent

A solvent for synthetic rubbers as well as natural rubbers has just been announced by E. I. du Pont de Nemours & Company, Wilmington, Delaware. This new solvent is Beta-Trichlorethane, a non-flammable, water-white chlorinated hydrocarbon.

Besides its unique solvent power for rubbers, Beta-Trichlorethane has a rapid and powerful solvent for such organic materials as oils, fats, waxes, tars and natural resins. It is miscible with alcohol, ether, and many other organic solvents, but is practically immiscible with water. Other properties of Beta-Trichlorethane include a boiling point of 114 degrees C. (237 degrees F.), a specific gravity of 1.4406 (12 pounds per gallon), and high stability in the presence of light and water. Because of this last property, it is non-corrosive to most materials of construction, an important feature in industrial applications.

* * *

Lowell Alumni to Meet During Greenville Show

On Saturday, February 16, a meeting of a group of former students of Lowell Textile Institute was held with the idea of forming an alumni association in the South. It was decided to have a dinner during the Southern Textile Exposition in Greenville, S. C., on Tuesday evening, April 9. It is expected that Charles H. Eames, president of Lowell Textile Institute, will be present and address the meeting.

All former Lowell Textile Institute students are invited to attend the dinner, and are asked to plan their visits to the Southern Textile Exposition for this day. Among those attending the organization meeting were: Ed Ford, Lawton Cleveland, Clarence Hooper, George P. Feindel, Arthur Thompson, S. H. Williams, J. C. Robertson, Parker Del Plaine, Kemp Haynes, Charles Potter and Harold P. Goller.

An Efficient System for Inventory and Purchasing of Mill Supplies

THIS is an interesting description of how one prominent mill determines when to buy supplies, and what supplies to buy; and tells of the method used in keeping a record of supplies on hand, and the procedure for ordering—with some good practical ideas for the man at the mill who is responsible for the purchasing . . . . . .

IF I should limit the scope of this article to one phase of the procuring of supplies—that is, purchasing—we would still have plenty of ground to cover.

I am of the opinion that it is best to follow through all of the steps that lead up to the actual purchase of the supplies. The steps will be sketchily covered, as I only wish to show the system that is followed in acquiring needed supplies. The complete detail of supply handling is not intended to be shown.

One of the most important steps in the acquiring of supplies is the means of knowing *when* and *what* to buy. When we stop to consider that there are more than three thousand parts that might have to be bought in order to keep the machinery, from the bale breakers to the cloth baling press, in working condition, we will realize that knowing *when* to order is important. In spite of every precaution we will sometimes find ourselves having to telegraph for supplies with a "Please rush by express" written into the order.

The number of parts is made more complicated by the fact that many mills have such combinations of machinery as Whitin and H. and B. fly frames; H. and B. and Saco-Lowell spinning; Nasmith and Whitin combers; Draper and Crompton and Knowles looms, etc.; as well as the fact that the looms might be a mixture of box looms, plains, dobbies, dobbies with multipliers, etc.

The question of how much money should be tied up in supply inventory is an important one. We have

BLANK MILLS 1/5/34 193

MR. Supply Room

PLEASE LET BEARER HAVE

1 - LM. 11466 (9)

Overseer

FORM 1

Form 1—Requisition to supply room for needed part. (Part LM 11466 is used for illustrative purposes throughout this article and in the illustrations) . . . . . .

NUMBER LM-11466 ARTICLE Pinion Cross Head UNIT C-129 PRICE .16

STOCK RECORD BLANK MILLS E-Model MAXIMUM MINIMUM

DATE	ORDER NUMBER	AMOUNT ORDERED	DATE REC'D	AMOUNT RECEIVED	DELIVERED	BALANCE ON HAND	DATE	ORDER NUMBER	AMOUNT ORDERED	DATE REC'D	AMOUNT RECEIVED	DELIVERED	BALANCE ON HAND
12/18	5020	50	12/26	50	5	55							
12/23					8	47							
12/28					7	40							
1/5					13	27							

FORM 2

Form 2—The perpetual inventory record card . . .

heard the figure placed at various amounts from five to twenty dollars per loom. In putting this figure at so much per loom we mean, of course, to include supplies for every machine from the opening through the cloth rooms. This also includes roller shop supplies as well as starch and other sizing materials. My experience has been that it is necessary to keep about ten dollars per loom tied up in supply inventory. Here an efficient supply man can save several dollars per month by his skill in handling and ordering parts so as to keep the inventory to a minimum.

It is practically impossible to know what supplies are needed, and when they are needed, unless a card index system is used in the stock room. By the use of such it is possible to know how to order and not cause any machinery to stop for needed parts that are not on hand.

A card index system shows: where the part is stored; what quantities are used; the balance on hand.

The parts are stored in bins. The markings on these bins are arranged to aid in orderly storing and distributing. They are arranged in rows marked *A*, *B*, *C*, etc. In the row marked *A* we may find several hundred small pigeon hole bins marked *A-1*, *A-2*, *A-3*, etc., up to include the total number of bins in Row *A*. Row *B* may be made up of larger sections to care for larger parts. In the whole room bins of every size needed will be found. A tag is placed on each bin and marker to show the part that is stored in the bin.

When a supply runner appears with Form Number 1 shown herewith, which shows that 1 LM 11466 is needed for Section 9 in the weave room, the supply room man takes the form and sticks it on a nail with other weave room requests. He then turns to the card index system and looks at the card file. In numerical order he finds the LM 11466 card. This card has printed on it beside the word "Unit" the number C-129. He then goes to bin C-129 and takes out the part and gives it to the supply runner. Later, when posting the supplies issued and bringing forward the new "balance on hand" for the item LM 11466, (See form number 2), he notes at a glance that it is time to order more of this part.

The next step is to make a request to the purchasing agent to buy one hundred LM 11466. This request is made on Form Number 3. The request is routed through the superintendent's office and unless he has reason for doing otherwise he okays the request and passes it on to the purchasing agent.

The purchasing agent indicates on Form Number 3 the firm from whom the parts are to be bought and gives it to a stenographer to be typed. The order is typed on Form Number 4 shown herewith. Three copies are delivered to the departments of the mill that are concerned with the handling of the supplies, and the original is signed and sent to the concern from whom the parts are to be gotten.

The request for supplies being in the hands of the purchasing agent, it becomes necessary to decide from whom to purchase the parts. The purchase of supplies falls roughly into three groups:

1. Those bought under contract and for which bids are asked; such as oils, grease, coal, acetylene, light bulbs and leather.

2. Those bought in large quantities at times when it is considered that a low point has been reached and it is advantageous to stock up, or purchase for future delivery. This group often includes starch, gum, tallow, roller skins, roller cloth, belt dressing, pickers, and roofing material.

3. Those parts that are bought on short notice to fill the need of replacement, or change in construction of goods. They include such items as gears, reeds, dobby parts, creel parts, lumber, nails, and hundreds of other parts.

Article Loom Parts From — Corpn. Atlanta, Ga.

ORDER SHEET

Date Ordered 1/5/34 193 Date Received 193

Mr. Purchasing Agent Please Order for Weave Dept.

Quantity	Size or No.	DESCRIPTION	Price
100	LM	11466 of N&R Supt.	

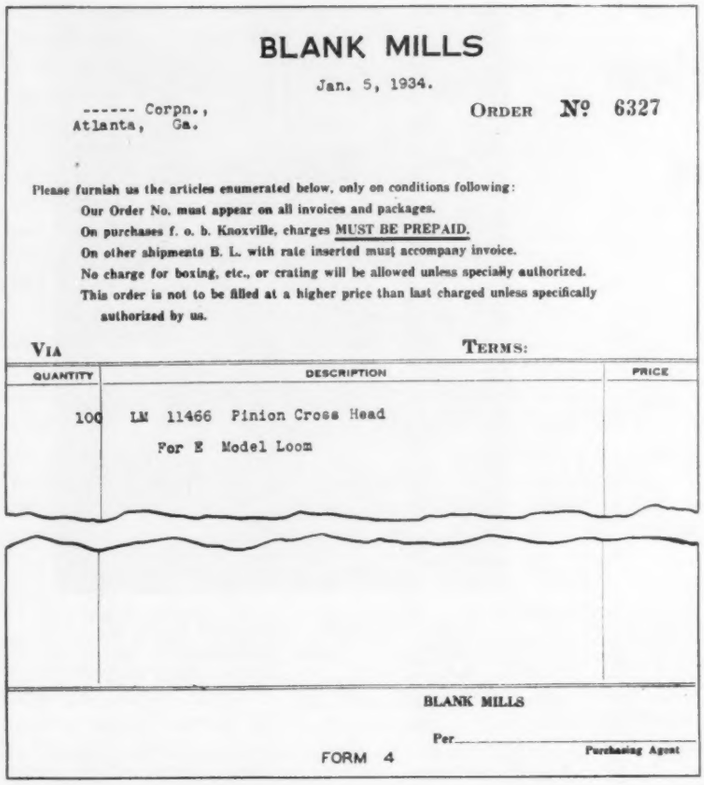
Ordered by Supply Room FORM 3 Charged to General Supplies

Form 3—The request to the purchasing agent to order an additional supply of a needed part . . . . . .

At times supplies will be needed for expansion, or for replacement of old machinery. This purchasing should not be classed with ordinary supply procurement.

In the purchasing of all supplies the buyer must depend largely upon the reputation of the manufacturer or distributor. Take the item of light bulbs. There are a few standard makes that we all know and can depend on. We will find other makes offered for sale at lower prices. To the inexperienced this might seem like a chance to save some money. As a matter of fact a purchase might result in the loss of considerable money. The cost of the electricity consumed by a light bulb during the thousand average hours which it will burn usually amounts to five or ten times the cost of the bulb. The variation depending on the price of electricity at the particular plant. Bulbs vary greatly in their efficiency. A low priced, inefficient bulb, may cost several times as much as a higher priced, efficient bulb, when we consider that the low priced bulb consumes more electricity for the same amount of light furnished.

Leather goods is another group in which a great deal of grief can be caused by non-effective purchasing. This is especially true in the case of leather belting. Leather goods are offered by many salesmen. As many as twenty of them will call on a mill in the course of one month. Each of them naturally gives reasons why his material is the best. We have no idea but that good belting could be bought from



BLANK MILLS

Jan. 5, 1934.

------ Corpn.,
Atlanta, Ga.

ORDER Nº 6327

Please furnish us the articles enumerated below, only on conditions following:
Our Order No. must appear on all invoices and packages.
On purchases f. o. b. Knoxville, charges MUST BE PREPAID.
On other shipments B. L. with rate inserted must accompany invoice.
No charge for boxing, etc., or crating will be allowed unless specially authorized.
This order is not to be filled at a higher price than last charged unless specifically authorized by us.

VIA TERMS:

QUANTITY	DESCRIPTION	PRICE
100	LM 11466 Pinion Cross Head For E Model Loom	

BLANK MILLS

Per_____
Purchasing Agent

FORM 4

Form 4—The final step in the purchasing transaction; the order from the maker . .

practically every one of these men. But we also know that two pieces of leather coming from the same steer's hide can be very different in quality. If we happen to get a belt made from the center stock of the back of the animal we get a good firm piece of leather that will wear well. If we happen to get a belt made from the porous belly stock we will have a belt that will flatten out on the pulley, stretch excessively, and probably get to running crooked on the pulley because it stretches more on one side than on the other. The remedy is, of course, to deal with a good firm that has a reputation for quality products and which is financially able to stand behind its products. To such a firm we specify that we want a first quality, center stock, belt.

With laps and plies that are strictly waterproof.

With from 8 per cent to 12 per cent grease content by weight.

With the natural elasticity of the leather preserved, and

Which is free from all defects in quality and workmanship. From this firm we fully expect to get our money's worth.

There is often a question as to the advisibility of taking bids to cover certain supplies. In some cases this is decidedly the best method to follow. For instance, the annual supply of coal amounts to a large sum of money, and several firms will be after the business. Having prepared before hand, by testing cars of coal from different sources to determine the percentage of ash; of fixed carbon; of volatile matter; of sulphur; the B.t.u.; as well as the fusion temperature of the ash, we know that either of several firms have a satisfactory material. We ask these firms to bid on the business for the coming year. Other firms may bid by request.

In the purchase of coal, we cannot accept the lowest of all bids from every source. Coal differs greatly in suitability for the job. Two firms located side by side and using the same type boilers may have to have different kinds of coal. In one case the boilers may be being forced to two hundred per cent of capacity to carry the load. In the other case the load may be only fifty per cent of capacity. In the case of the over-loaded boilers a low fusion coal could not be used because large clinkers would form on the grates and burn out sections of them unti lit would be necessary to close for repairs. In the other case the comfortable load being carried would allow a coal of lower fusion point to be used without fear of damage to the grates.

It is often advisable to make purchases in larger quantities than is called for by the immediate needs. For instance, a small fuse link that sells for three cents each can be bought in quantities and with the discounts as shown below:

100	No discount
1,000	20% discount
2,000	40% discount

Burlap is ordinarily quoted with discounts that increase with each increase of five bales bought.

Electric light bulbs can be bought at 10 per cent off list if we agree to take one hundred dollars worth. We can buy the same bulbs at 50 per cent off list if we agree to take twelve hundred dollars worth in the course of the year.

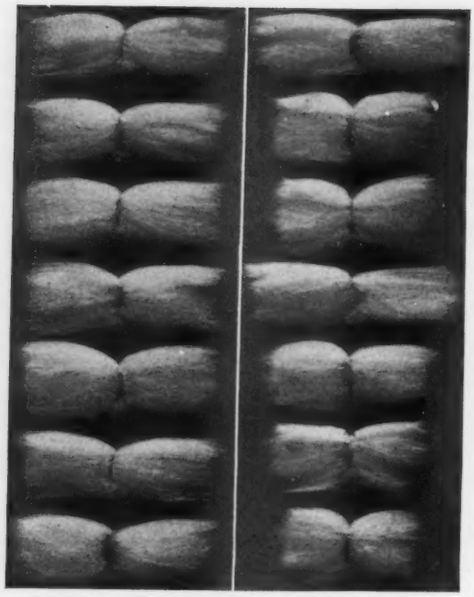
Salt purchased for water softening, or other purposes, can be bought at 30 per cent lower prices if it is taken in sufficient quantities to allow it to be shipped in bulk instead of being shipped in sacks.

It is obvious that we should make purchases in large quantities in such cases as those mentioned. Changing conditions and discounts make it imperative that the purchasing agent keep in touch with price lists if he is to get every advantage. It is not often that a selling house will call attention to the fact that an increase in the size of an order would lower the average price to be paid. The reason for this is probably that some buyer has taken offense when such was called to his attention. On the whole, buyers are anxious to be shown where and when they can take advantage of a chance to keep down the purchase price.

One-Variety Cotton Production Pays

By A. B. Bryan

MILL men are vitally concerned with the quality of their cotton. They are interested in securing locally a major portion of their supply, when this is possible. We present this description of the success attained in South Carolina with one-variety cotton production, as of interest to mill men generally, and with the suggestion that they discuss the subject and the facts given in this article—with their farmer friends . . . . .



Typical samples of combed staple on seed from consecutive plants. Left, from pure improved seed; right, from mixed Rucker seed . . . . . .

"THE majority of the farmers in the Easley community are producing all of their cotton of the Coker Cleveland 5 variety and are marketing the cotton as a co-operative community project. The efforts of these farmers have met with success, for, besides an increased yield of lint per acre resulting from the planting of improved cotton seed, the farmers have realized a premium as high as 75 to 100 points, or $3.75 to $5.00 per bale, on cotton that has a staple length of from 1-inch to 1 1-16-inches as compared with basis 7-8-inch staple prices."

This statement by Prof. W. C. Jensen, agricultural economist of the South Carolina Experiment Station, puts in a nutshell the outstanding success of the farmers around Easley in co-operating to grow one variety of quality cotton and reaping the rewards, financial and otherwise, of that co-operation. Mr. Jensen makes the statement in connection with a study of results of one-variety production conducted by J. A. Shanklin of the United States Bureau of Plant Industry in co-operation with the South Carolina Experiment Station. What the study shows has significance and economic importance for cotton manufacturers as well as for cotton growers. Of 85 growers in the Easley community 50 were using seed of an improved variety (though some of these were mixed) and 35 were using "run-down" short staple varieties, and the survey shows that 28 per cent of the cotton in this community is from pure seed of improved varieties, 42 per cent from improved varieties that have become mixed with seed of other varieties, and 30 per cent from "run-down" short staple varieties.

The average yield of lint per acre from pure seed of improved varieties is 362.0 pounds compared with 298.2 pounds for improved varieties produced from mixed seed and 321 pounds produced from "run-down" short staple varieties.

The cotton produced in the Easley community, the data show, varies in length from under 13/16-inch to 1 1/16-inches. There is no long staple cotton grown in the community.

Findings as to Quality

Though averages showed but little difference in the length of staple produced from pure seed of improved varieties and mixed seed of improved varieties, there was a wider spread in staple lengths for the cotton from mixed seed of improved varieties than pure seed of improved varieties. In the "run-down" short staple variety group 90.6 per cent of the cotton was under 1 inch length, as compared with only 30.1 per cent for the improved pure seed group, and 24.0 per cent for the mixed seed group. Of the cotton produced from the "run-down" short staple group 36.4 per cent is classed as untenderable, while there was no cotton from the other two variety groups so short as to be so classed.

It is clear then that the growing of an improved variety is of decided advantage to the farmers of the community because of the increased yields and the premiums received for the longer staple.

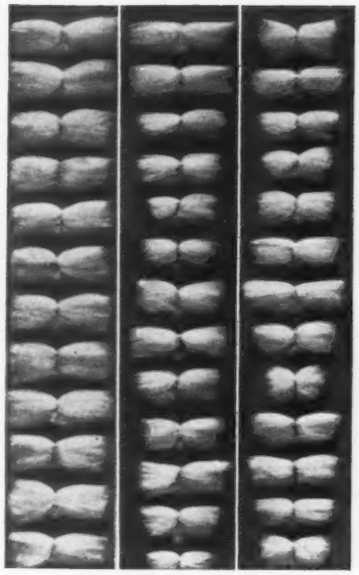
A Striking Contrast

As a striking contrast with the fine results of the one-variety co-operation in the Easley community, let us notice briefly the unsatisfactory results from a community where there was no co-operation toward the growing of one variety and two-thirds of the farmers are using seed that were classed as "run-down" or varieties producing 7/8-inch staple or less, the other farmers using several pure or mixed improved varieties.

Briefly the results show that in this community yields from pure seed of improved varieties averaged 270.3 pounds of lint per acre as compared with

only 233 pounds for mixed and "run-down" varieties; and that 65.5 per cent of the lint of the community is from these "run-down" varieties and mostly untenderable in market classification. Cotton from mixed seed of improved varieties produced only 57.0 per cent measuring 15/16-inch or longer, and, of the 43.0 per cent that was below 15/16-inch, 19.9 per cent was untenderable. Fifty-three per cent of the cotton produced from the short staple "run-down" varieties was untenderable, and only 0.8 per cent was 1-inch in staple length.

"With the predominance in this community of cotton of short 'run-down' varieties, it is impossible," Mr. Jensen concludes, "to keep the improved varieties of the community from becoming mixed, and it is doubtful if the farmers of the community who are producing cotton from the improved varieties receive any premium for their cotton on local markets over the short staple length cotton of the community."



Combed staple on seeds from consecutive plants on the row. Left, pure seed; middle, mixed seed; right, "run-down" seed . . .

Ruby Success Outstanding

The good results of the adoption of a one-variety program of cotton production in the Ruby community in Chesterfield county are very evident also. In 1931 the Ruby farmers, having adopted the one-variety plan, planted about 4,000 acres of Coker Cleveland 5 Strain 2, and a study of the survey data shows that this pedigreed seed consistently outyields the mixed and "run-down" varieties as well as producing a more uniform fiber.

The average yield of lint per acre from pedigreed seed of improved varieties was 391.6 pounds, compared with 290.4 pounds from mixed seed of improved varieties, and 273.4 pounds for "run-down" short staple varieties. The yield of lint per acre for the long staple cotton was 268.9 pounds, or within four pounds as much as for the "run-down" short staple cotton varieties. The data show that about 75 per cent of the cotton produced in the Ruby community is from the improved varieties of pure seed or the long staple cotton, both of which groups are classed as improved cotton. Only 10 per cent of the cotton in the community is classed as "run-down" short staple variety cotton.

Besides being lower in yield of lint per acre, the staple length of cotton produced from "run-down" short staple varieties is less than for the other groups of varieties, there being 66.0 per cent of the cotton from this group measuring less than 1-inch staple length, as compared with only 10.8 per cent of the cotton from pedigreed seed being less than one inch in length. Only 3.5 per cent of the long staple cotton measured less than 1⅛-inch, the remaining 96.5 per cent being 1⅛-inch or longer.

No Cooperation—Poor Results

As contrasted with the Ruby results it is interesting to note what was found in the Blenheim community in Marlboro county, where farmers were producing cotton varying all the way from "run-down" short staple to long staple.

The average yield of lint per acre in the Blenheim community from the pure seed of improved varieties was 308.5 pounds, compared with 311.2 pounds for mixed seed of improved varieties, and 268.1 pounds for "run-down" short staple varieties of seed. The data show that about 60 per cent of the cotton in this community is produced from improved seed, while the remaining 40 per cent comes from either "run-down" cotton varieties or from very short staple varieties, and that there is a wide variation in the length of staple produced in the Blenheim community, there being 4.3 per cent untenderable cotton in the community, and yet 8.6 per cent of the cotton of the community is 1⅛-inch or longer. This condition probably results from the large number of varieties grown in the community and the large variation in staple lengths of these varieties.

The data lead to the conclusion that there are in the Blenheim community too many varieties of cotton and too great a range of different staple lengths to produce a fiber of uniform staple length cotton in the community. If only one of the high-yielding longer staple cotton varieties were grown, in preference to the many varieties of cotton that are now being produced, the growers would be greatly benefited through the one advantage of greater uniformity.

Improved Varieties Pay

Summary figures for the four communities studied are conclusive of the value of co-operation of farmers in growing one variety of cotton in a given community, as well as of the importance of improved varieties and pure seed.

Of the 329 growers included in the study of the four communities 91 farmers grew cotton of improved varieties, 77 growers used mixed seed of improved varieties, 130 growers planted "run-down" short staple cotton, and 31 producers grew long staple Delta type cotton.

Of the cotton produced from pure seed 73.7 per cent was 1-inch or over in staple length, and there was no untenderable cotton produced from pure seed

and only 1.9 per cent of the cotton from mixed seed of improved varieties was classed as untenderable. In the "run-down" short staple variety group, only 3.3 per cent of the cotton was 1-inch or longer while 26.9 per cent of the cotton was untenderable.

In all communities the pure seed of improved varieties produce the highest yield of cotton per acre. No data collected justified the planting of "run-down" short staple varieties for they are the lowest yielding group of varieties and also have a much shorter staple.

"One-variety cotton communities are a means of successfully establishing the superior varieties of cotton that are now being produced by plant breeders in preference to the numerous varieties, many of which are inferior and which are now being produced in many sections," says Mr. Jenson, briefly stating the value of community co-operation on cotton varieties.

"Once a one-variety cotton community is established among progressive farmers and they become familiar with the benefits derived from this practice, it is reasonable to expect that the farmers will be interested in continuing the practice of growing only one variety of cotton in the community. The farmers soon learn that they increase the yield of lint per acre by planting an improved variety of cotton; that they can command a higher price for cotton grown in their community because of the uniformity of grade and staple; and that there is a ready market for cotton produced in a one-variety cotton community.

"In establishing a one-variety cotton community, the first advantage the farmer derives is that he is assured of a source of pure seed and is saved the expense of buying expensive seed every few years from seed dealers. When all the farmers of a community grow only one variety of cotton, local dealers recognize the community as a source from which they can secure a large supply of cotton of uniform quality and staple length. This creates a reputation for the community which is an economic advantage to it. Furthermore, the social advantages are important, and the ability of farmers to cooperate on a cotton improvement program is of value in promoting other worthwhile co-operative projects."

The Local Demand Background

Regarding the background of the problem of maintaining high quality, uniformity, and yield of lint cotton, the investigators point out that while there has been considerable improvement in the staple produced in South Carolina during the past five years, there is need for further improvement in order to furnish cotton of the desired staple length and uniformity for local consumption. The latest available data show that the annual consumption of cotton by the mills in the state is about 1,200,000 bales, and of this 79.4 per cent was cotton of 15/16-inch staple or longer, which amounts to 956,800 bales a year. This is more than the five-year average production of 859,600 bales in the state.

Because of the local demand for cotton of 15/16-inch or longer staple, the cotton producers of South Carolina are assured of a local market to dispose of all the cotton they produce if it is of the desired staple lengths. Having a local demand for their cotton, local producers have been thought of as having an advantage in price that is approximately equal to the difference in freight charges for similar cotton shipped from other parts of the cotton belt.

Certain it is that the problem of high quality and high degree of uniformity of staple is a most important problem not only for South Carolina and her growers and manufacturers but for those of any state or area. That the one-variety community plan of production helps to solve this problem is beyond question.

U. S. Rayon Production Establishes New High Record in 1934

Production of rayon yarn in the United States in 1934 established a new high record for all time, according to figures compiled by the Textile Organon, published by the Tubize Chatillon Corporation. Consumption last year showed a drop of only one per cent compared with the 1933 total, but exports increased while imports declined, thus resulting in only a small increase in stocks on hand at the close of the year.

Rayon production in 1934 aggregated 210,331,000 pounds, an increase of about one per cent compared with the 1933 output of 208,530,000 pounds (as revised). Of the total, viscose production increased from 76.4 per cent to 77.5 per cent of all output; acetate production from 17.3 per cent to 19.0 per cent; while production of yarn by other processes decreased from 6.3 per cent to 3.5 per cent.

Domestic consumption during 1934 aggregated 199,466,000 pounds, a reduction of 4 per cent compared with 1933 consumption of 207,409,000 pounds. Imports of rayon reached a new all-time low in 1934 while exports established a new record high of 2,500,000 pounds, equal to slightly more than one per cent of total domestic consumption.

As of the close of 1934 stocks of rayon yarn on hand increased 8,425,000 pounds compared with the close of 1933. "This increase in stocks," states the Organon, "represents not only an increase from an unduly small stock position in December, 1933, but also reflects the larger actual stocks which necessarily must be kept on hand to supply a larger demand. Thus, one month's stock supply at the end of 1934 would amount to 16,500,000 pounds, whereas a similar one month's stock based on 1932 shipments would amount to only 12,500,000 pounds."

All of the above totals are based upon actual figures received from approximately 90 per cent of the industry. Operations of the remaining 10 per cent of the industry have been estimated.

The following table shows production, consumption, production plus the import balance, and the estimated change in domestic stocks at the close of the year, compared with the previous year (in thousands of pounds):

	Production	Consumption	Production plus Net Imports	Change in Stocks
1934	210,331	199,466	207,891	Inc. 8,425
1933	208,530	207,409	208,354	Inc. 945
1932	134,814	152,178	134,358	Dec. 17,725
1931	150,879	157,359	152,369	Dec. 4,990
1930	126,805	117,196	132,801	Inc. 15,605
1929	121,283	131,329	136,099	Inc. 4,770
1928	97,232	100,133	109,153	Inc. 9,020
1927	75,555	100,022	90,182	Dec. 9,840
1926	62,692	60,627	71,637	Inc. 11,010
1925	51,902	59,125	57,195	Dec. 1,930

Weaving and Slashing Problems Covered at Meeting in Spartanburg

THIS complete report of the interesting discussion in Spartanburg, prepared from full notes made by our own representative at the meeting, will provide you much food for thought and practical experience on a number of pertinent subjects relating to slashing and weaving.

Slasher speeds and tensions, loom speeds, experiences with Model X looms, friction versus mechanical let-offs, shuttle actions, jerked-in filling, and methods of yarn conditioning are among the subjects covered . . . . . .

A THOROUGHLY practical and interesting discussion on slashing and weaving subjects was held by the Weaving Division of the Southern Textile Association at the Hotel Franklin, Spartanburg, S. C., on Saturday, February 2. This was the first meeting of the division that had been held some time. The attendance was unusually good, a crowd of more than 200 mill men and others being present.

Smith Crow, superintendent, Drayton Mills, Spartanburg, S. C., who is chairman of the division, conducted the discussion. After a few preliminaries, Mr. Crow immediately started the practical discussion which was based on a number of questions selected by the committee in charge of the meeting.

Speed of Slasher

The first question was, *"At what speed and temperature should a slasher be operated to give a well-slashed warp?"*

W. E. Baker, of the Baldwin Plant of Springs Cotton Mills, Chester, S. C., was the first to respond, stating, "We have experimented quite a bit on different speeds, and we run most all kinds of counts, and we find that we get best results delivering at 34 yards a minute on a 64x60. Of course the number of the yarn and the number of ends have a lot to do with the speed, but on 64x60, we tried 45 yards and it did not do so well, and then we tried 28 yards without good results, and at the present time we are delivering 34 yards a minute and that gives the size plenty of time to penetrate the yarn and gives us a better finish, and we do not have as many broken ends or laps.

"Our temperature runs around 224 degrees on the little cylinder and 228 on the big cylinder. We keep our size vat at 208 to 210 degrees. We make them lease on every warp where they have any trouble at all."

Reported by Robert W. Philip.

"Do you have automatic controls?" asked the chairman.

"Yes, we have the Taylor instruments," replied Mr. Baker. "These instruments control the cylinders, vat and cooking kettle."

"Do you get better results with the automatic control?" Mr. Crow next asked. "Much better," replied Mr. Baker. "We leave about 7½ per cent moisture in the yarn when it is finished."

W. E. Hammond, superintendent, Balfour Mills, Balfour, N. C., next reported. On an 80x80, he said, "we had been running at 47½ yards a minute, but we found it was necessary to bring our slashing speed down in order to dry the yarn properly. We run at 45 yards a minute, with 3,120 ends, and finish up with about 8 to 8½ per cent moisture. We keep the temperature in our storage kettle at 180 degrees, and in the size box at 204 to 205 degrees; and on the large cylinder at 230 degrees—on account of the speed—and on the small cylinder, 240 degrees."

SMITH CROW, superintendent, Drayton Mills, Spartanburg, who is chairman of the weaving division . . . . .

Mr. Hammond stated that his steam pressure registers between four and five pounds, and that he applies from 10 to 11 per cent size. He added that beyond 8½ per cent moisture, danger with mildew might be encountered. However, even at 47½ yards per minute, he had found mildew is successfully prevented by the use of two ounces of Pinol in the size kettle. He stated that he uses this in the cooking kettle, where he cooks his size for about 10 minutes before pumping in the starch. He stated that this method not only prevents mildew but holds down corrosion on the selvage yarn.

Mr. Hammond added that he has a 320-pound first squeeze roller and a 409-pound roll for the second roller. Mr. Hammond added that he uses the automatic temperature control and finds it very satisfactory, on his 30s warp.

H. H. Wood, of Oconee Textiles, Inc., asked what kind of starch the men were talking about. Mr. Baker is using thin-boiling corn starch and Mr. Hammond uses thick-boiling corn starch.

Mr. Baker added that they weigh carefully all of the ingredients in their mixture, and that in mixing

their size they start off with 100 gallons and finish with 136 gallons—"and it generally stays that way because our size kettles are jacketed. We use a 575-pound roller on the front roller and a 450-pound on the next roller. We must keep a good cushion on that roller and keep it from flattening out the yarn. I think we get a smooth, round thread; we put about six yards on to start off with and about 4½ yards on the first roller." He stated that his starch is 40 fluidity.

As to the time of cooking, Mr. Baker stated that, "we cook ours one hour and 45 minutes at about 190 degrees, and after it gets to a boiling point it is about what we keep it. We cook the starch 30 minutes before we put the compound in."

"We bring ours to a boil at 202 degrees which is the boiling point at our altitude (2250 feet)," said Mr. Hammond, "and cook it for one hour and 45 minutes."

Mr. Bishop of the Springstein Mills reported bringing the size to a boil in 35 minutes and cooking it for one hour and 45 minutes.

J. B. Mitchell of Belton Mills stated that, "we cook one hour after bringing it to the boiling point in 30 minutes, at 208 degrees." Ray Sweetenberg, assistant superintendent, Ware Shoals Manufacturing Co., stated that, "after ours is brought up to a boil it is cooked for one hour. We use 50 fluidity."

W. E. Baker

Newton G. Hardie raised the point in connection with fluidity that the starch manufacturers do not have a uniform method of indicating the fluidity of starch—that is, that one manufacturer's 40 fluidity starch might not match he 40 fluidiy starch of another manufacturer—and several present agreed that this is the situation.

H. H. Wood asked for reports from anyone present using Sago starch or flour. He reported that he uses it but that one problem is that he must cook it for four hours. Mr. Grant, overseer of weaving, Lockhart Mills, Lockhart, S. C., uses Sago and said that he finds it, on their print cloths, to give smoother better running warps. He cooks it for one hour and 45 minutes. Mr. Wood said that he uses the Sago on a leno weave, 40s yarn, and that on a recent order of 1,500,000 yards, he produced this with 90 per cent production and 4 per cent seconds—which everyone agreed was a good record with anybody's starch.

Tension on Slashers

"What part does tension at the slasher have in producing good running work and good running warps in the weave room?" was the next question submitted by Chairman Crow.

"We have practically no tension on our yarn at the slasher," reported Mr. Baker. "We have break rods in the back, and free wheeling on the slasher which takes off all of the tension and leaves the elasticity in the yarn." The break rod on the back is between the size box and the first cylinder, he explained. Asked what he meant by "free wheeling," Mr. Baker replied that if it happens that the cylinders are not traveling at the same speed, the "free wheeling" will let one cylinder drop back to compensate for the difference in speed to where it will not pull the yarn excessively. He added in response to a question that he had not made any tests as to the actual amount of stretch in the yarn.

Mr. Hardie reported that a recent test showed that he was getting 1½ per cent stretch on 30s yarn. He made the test with two yardage counters, one at the back and one at the front, the front counter being on the calender roll. Marshall Stone, superintendent, Arkwright Mills, stated that a test he made some time ago on 12s to 17s yarn showed a stretch of 1.25 per cent. Frank D. Lockman, superintendent, Lockhart Mills, pointed out that if the front counter operated from the calender roll there might be some stretch between the calender roll and the loom beam that would not be registered. Mr. Stone said his front counter was on the loom beam. Mr. Lockman then reported on 30s warp a stretch of from 1.2 to .94 per cent, there being a variation in stretch between his six slashers—with the front indicator on the loom beam. The back counter was located on the roll just before the yarn goes into the size box. He said he had formerly encountered stretch running from 1½ to 2 per cent but had been able to reduce this.

N. G. Hardie

Mr. Stone asked whether anyone present had calipered the copper size rolls, explaining that he had done this and found a difference of 1/16-inch in the diameter of these rolls. It waspointed out that if this condition were true and the larger roll were the second roll that some stretch would be produced here. Mr. James, of the Phenix Mills Co., stated that he calipered his rolls as a precaution and had found them to be the same, and Mr. Bishop had the same experience. Mr. Williams of Drayton said he had found some variation in the size of these rolls. The importance of having these rolls of the same diameter was stressed. Mr. Wood pointed out that if the first roll were somewhat larger, then the yarn being wet after it hits this roll might shrink some and thus make up the difference.

J. F. Chalmers, superintendent, Greenwood Cotton Mills, reported that he had once installed one new roll, and advised mill men in replacing one roll to replace both, because the rolls are so constructed that after running for a number of years there will be a sag between the ends and the center brace.

The third question submitted by Mr. Crow was what part the personnel element plays in slashing and it was generally agreed that this is a most important item—as one man pointed out, even with automatic control equipment, the man at the slasher after all must "control the controls". Professor McCormick of Clemson College raised the question as to whether a hard-wound warp or a soft-wound warp would be better. In replying to this, Mr. Lockman pointed out that it stands to reason that a warp that

is wound too hard will cause the yarn to be stretched, and that if a warp is too soft, the yarn will fall down and not make good cloth, so that a "happy medium" between the hard and the soft is the best objective.

The chairman next entered the weaving discussion, asking first, *"What part does loom speed have in the supply bills?"*

Speeds of Looms

Thomas Henderson of the Draper Corporation asked whether the question referred to the leather parts or to loom castings, etc., or to both, and Mr. Crow explained that it was designed to apply to the loom supply bill as a whole and in detail.

"We have some modified D looms running 155 picks per minute, and some Model K looms running 160 picks, and some Model X looms running 192 picks," said Mr. Baker, "and outside of the leather, the supply bill on the X Model looms is less than on the others. Of course they are the newest, but on them we have very little broken castings, but as to the box fronts, binders and pickers, they have to be covered every six or eight weeks." Mr. Baker stated that they had tried going up to 204 picks per minute on the Model X looms but hod not remained there.

F. D. Lockman

W. E. Hammond

Frank D. Lockman was called upon and stated that he has one group of 816 Model E looms installed in 1930, and another group of 804 Model E looms of the same width installed in 1905; that he runs the 1905 looms at 160 picks, and the 1930 model ot 170 picks. "Of course our supplies on the 1930 model are less than on the 1905 model, although we have 10 picks per minute higher speed. About three years ago we put these 1905 models up to 170 picks, and it did run up our supply cost some, but we ran them that way for about a year and a half, and then reduced them back to 160. As conditions now are, we do not have enough yarn for our looms, but if we had plenty of yarn, I believe that we would put them back up to 170 picks and go ahead and take the additional expense of the supplies."

Mr. Sawyer of Waldensian Weavers, asked what difference there was in the percentage of production or efficiency when the looms were raised to the higher speed, but Mr. Lockman reported that his method of keeping records did not permit him to answer that question accurately. Mr. Baker reported that he found his efficiency went off about three per cent when he speeded up his looms above the speed set by the manufacturers.

"I have been in contact with quite a few experiments on increasing loom speed," reported Mr. Henderson, "and any considerable increase in speed made the cost prohibitive. A loom that is designed to run at 160 picks per minute will not run satisfactorily at 180 picks—and the result will be found in breakage of loom parts, and wearing of leather parts, and loss of production. A loom should be run at the speed for which it is designed."

Mr. Hammond reported his experience with X Model 40-inch looms and said he finds 192 picks to be the best for this width, and that of course the speed goes down as the width of the loom is increased; that a 48-inch loom of the same model should be run at about 180 picks.

In answer to a question, Mr. Lockman reported that his shuttles last 18 months, running 80 hours per week, on the Model E looms that run at 170 picks.

Mr. Thomas, overseer of weaving, Abbeville Cotton Mills, Abbeville, S. C., said, "We keep an individual card system on our shuttles and we get a life of 22 months on a 36-inch loom running 160 picks. In regard to loom speeds, a 40-inch loom was designed to run 160 picks per minute and when you get above 160 picks you create quite a lot of vibration which will have a very bad effect and which will put the loom under a bad strain.

"With regard to the Model X, I was in charge of the first Model X job of any size in the South, and we tried a great many settings, and we found that the X Model loom will operate as well at 192 picks per minute as the E Model will at 160 picks. The main thing that I could find was that the crank pin in the sword had been lowered 1½-inch, and the loom could be speeded up without causing excessive vibration in the loom, and in order to do this we found it was necessary to pick the looms a little earlier in order to run them without excessive vibration. Picking on top center would cause the point of the shuttles to strike the shuttle feeler on the battery end and cause the loom to give some trouble in changing; on the other end, it would strike the outside prong of the filling fork and cause the filling fork to jump the hook and make thin places. However, we found that after the help became familiar with the X Model loom that they could operate them with as much ease as on the other models."

Mr. Thomas stated also that on this job they changed the harness to a 17 degree staggered cam and it made a big improvement. This change was made by actual test under the supervision of the company's efficiency department and showed that with the change that it took 24 looms to produce as many loom stops as had been produced on 18 looms. He stated that on this job, on 80x80, the weavers ran 40 looms, and on 100x60, 18 looms.

W. A. L. Sibley, superintendent, Ware Shoals Manufacturing Co., made a statement clarifying the discussion on loom speeds, by saying, "Do you think that when a loom is designed for 160 picks that it is designed with the idea of fitting the industry as a whole more or less? For that reason I do not think that a mill that has better cotton, that is making better yarn, that has a better weave room force than the average should be willing to sit down with an average speed. I want to leave that thought, that I do not think it is altogether the design of the loom; I think a big part has to do with the running of the

mill, the yarn that is made, and the cotton that is being used, and the type and character of the weave room force." Mr. Crow pointed out that while this was true, he felt that the standard speed should be used as a basis from which to work.

W. E. Hammond of Balfour, stating that he had quite a bit of experience on loom speeds, declared that, "I have always been a low speed man, but they are building looms better than they ever did, and I would like to say that our X Model looms will give as good satisfaction at 192 picks as the E Model does at 160 picks. There are conditions that will let you go up on that. However, a high speed loom will be harder on the shuttle and will use more leather goods, but the loom parts cost will be very much smaller, excepting leather. We find that our total loom repair cost on about 500 X Model looms is about $60.00 per week lower than it was on the previous models."

Mr. Hammond said again that he had taken his X models up to 204 picks per minute but had reduced them back to 192. He expressed the opinion that the speed of a loom has nothing to do with the thread breakage, and that on the new looms at 200 picks per minute there is no more end breakage than on the former models at 150 picks. He said a recent test on his X Model looms, running 3,124 ends of 30s warp, had averaged .56 stops per loom per hour and that is a better percentage than they ever got with the low speed looms.

Friction Versus Mechanical Let-Off

Mr. Crow next asked, *"Are mechanical let-offs better than friction let-offs?"* Mr. Henderson of Draper Corporation replied, "I believe without question that the mechanical let-off is better than the friction let-off." He explained that in his opinion the mechanical type provides a more even let-off of the yarn without attention from the weaver, and cited the case of a mill making goods for adhesive purposes, which could have no variation in width, where the substitution of the Roper type of let-off for the friction type produced entirely satisfactory results.

Mr. Wood asked whether Mr. Henderson would recommend the Roper let-off for high sley rayon, Celanese and silk goods. Mr. Henderson replied that he had in mind several mills that weave that kind of cloth with the Roper let-off; that one mill has it on all of their Draper looms and would like to have it on their Crompton and Knowles looms. This mill is on a construction of 100 denier warp and 150 denier filling, 8-harness, 180x80—using the Roper let-off.

Mr. Crow asked whether anyone had changed from a friction let-off to a mechanical type, and W. E. Baker replied that when he was with the Hamilton Carhartt Mills, they changed from a friction to a Roper let-off and got better results. He pointed out that when the humidity gets a little heavy in the weave room, the friction type let-off has a tendency to jump.

Mr. Wood stated that, on some classes of rayon specialties, "the friction type is better because you can get a more even piece of goods, and you have less rowy cloth with the friction type."

"My experience has shown me that the trouble of rowy cloth has only been the let-off until the overseer became convinced that the trouble was elsewhere," said Mr. Henderson, "it is usually in the harness movement or the take-up."

"What provision does the Roper make for low-pick goods, such as seven picks to the inch?" asked Mr. McCormick.

Mr. Henderson explained that the mechanical let-off is available in two ranges, the lower one going down to 15 picks. "I do not know what you would do with seven picks, unless it would be to take out the internal gear pinion and set screw the internal gear to the shaft." Mr. Wood brought out that if this were done it would make a friction type of let-off out of the mechanical arrangement, and Mr. Henderson pointed out that this would be the case, but that it would be a compound friction.

Speaking of the speed of the let-off, said Mr. Grant, "that is what controls the warp let-off. I know that if you go from a high to a low pick you can raise your driven arm and that speeds the let-off. You can also change the pinion gear and have it of the same pitch but with a different number of teeth. One time we had both types of let-offs, and when I went to the mill they were running the friction let-off. This was on 3, 4, and 8-harness goods and we had a lot of trouble about keeping the friction right, and I changed one alley of looms onto the Roper, and it was much better and then we changed the whole mill and finally took the friction let-offs off and they are stored in that mill today."

Mr. James asked whether on the friction type of let-off it is best to use the round chain, the flat chain or cork or leather. Mr. Hardie reported that the flat chain is best, and makes the best looking piece of cloth. Mr. McMahon of Victor-Monaghan stated that on crinkled work, he finds the flat chains are much better, as it makes the crinkle more even. He said that he uses a combination of graphite and grease for lubricating the chains.

Mr. Wood added that he uses the Roper let-off on Draper looms, but that on top beam work he uses the friction with flat chains, stating that he finds the Roper let-off is best in most all cases but that he has run onto certain constructions on which he could not use the Roper, especially on high construction rayons and silks.

Experiences with Metal Back Reeds

"Which are better, metal back or pitch-band reeds?" was the next question submitted by the chairman. Mr. Bolt of Brandon Corp. reported that the biggest objection he had found with the metal back reed was in repairing it in case it got a hard lick or anything like that; if it doesn't happen with an accident it is all right, he said. Mr. Wood said that due to the construction in the all-steel reed the vibration in the loom causes it to break. Mr. Bolt said he used it on nothing higher than 112 sley. Mr. Crow brought out the claim of less reed marks while the reed is new; Mr. Wood said he had seen no difference. "Another trouble," said Mr. Bolt, "is that the dents are apt to break on the selvage; there is no 'give' to it, and the vibration from the loom will

cause the dents to break at the top or the bottom."

Frictions for the Shuttle

"Which is best to use for tension in the shuttle, bristle or fur?" was the next question. "That depends on what you are running for filling," replied Mr. Henderson, who said that fur is best for silk and cottons finer than 45s, and that for coarse cottons, hog bristles are satisfactory. "We use fur for 43s, and bristle for our coarser fillings from 6s to 30s," said Mr. Baker. They use the tension on only one side of the shuttle, he said, in answer to Mr. Crow. Mr. Henderson pointed out that the shuttle is not really lined with the fur or bristle, but that only a strip is used; sometimes, he said, a mill uses two vertical strips at the tip of the bobbin. Mr. Hammond said he has used both bristle and fur, that he prefers fur, having had some trouble with the bristle.

E. T. Lollis, overseer of weaving, Ware Shoals Mfg. Co., answered a question from Mr. Wood as to what should be the proper clearance between the end of the filling bobbin and the mouth of the shuttle, on cotton work, by stating that he runs three different lengths of quills and three different lengths of shuttles—ranging from a 7⅜-inch quill in a 7⅜-inch shuttle to an 8-inch quill in an 8-inch shuttle and that his filling breakage was less in running a 7⅜-inch quill in an 8-inch shuttle than otherwise. This, he said, gives a clearance of ⅝-inch, but Mr. Henderson pointed out that he meant ⅝-inch *more* clearance, since there must already be a clearance in the shuttle. Mr. Lollis runs 40s filling. Mr. Henderson asked him whether he felt the decreased end breakage was due to using the large shuttle, or the short quill, and Mr. Lollis replied that the short 7⅜-inch bobbin in the 8-inch shuttle gave the least end breaks.

Preventing Jerked-In Filling

"What is the best method of controlling jerked-in filling?" the chairman next asked, explaining that he meant the trouble frequently encountered on the transfer of the bobbin, with 7- or 8-inch lengths of filling being jerked back into the cloth. "The Stafford thread cutter, which cuts the filling near the shuttle eye, is the only method I know of preventing that trouble," said Mr. Henderson.

"Do you find it necessary to adjust that Stafford thread cutter according to the yarn count you are running?" asked Mr. Crow. "No," replied Mr. Henderson, "there is a standard setting in relation to the shuttle and the shuttle front box plate, so you do not change the setting in going from one number of filling to another."

Mr. Bishop indicated that the Stafford thread cutter wasn't the entire remedy, because "sometimes it will jump in there at times other than the bobbin change." Mr. Lollis said he has the No. 19 thread cutter on coarse numbers and the Stafford on 40s, and that he can eliminate jerk-ins better with the No. 19 than with the Stafford. "Can you entirely eliminate jerk-ins with either?" asked Mr. Crow. "No, sir", was the reply. Mr. Henderson told of a certain mill that was running more than 50 per cent seconds on account of jerk-ins in a fabric in which they could not be picked out, due to the inspection and purposes of the fabric; and that with no other change than the installation of the Stafford thread cutter, they pulled their seconds down to three per cent. Called upon by a friend in the audience, H. H. Wood told of a contrivance he had developed to help prevent jerk-ins; he placed a wire on the race plate that lies on the race plate while the loom is running, and this wire raises the filling up so the cutter will get it and then the wire drops back so the shuttle will pass.

R. F. Bagwell asked whether the shuttle eye has anything to do with jerk-ins, and which type eye is preferred. Mr. James of Phenix replied that he uses the cast-iron eye which he considers preferable. Mr. Hammond reported he had trouble with jerk-ins being caused by a "hair-on" picker which he smoothed off to help reduce this trouble. "I have had a great deal of experience on that," said Mr. Thomas, "and I find that a lot of the filling is jerked-in underneath the shuttle. We have tried tapering the shuttle on the edge on the inside, and we thought that helped us." He said he tapered it out, hollow at the center, and that the mill did this work, that it wasn't a special-made shuttle.

"Which gives the most trouble, the single or double filling fork?" asked Mr. Bishop. Mr. Lockman replied that on any trouble which might be caused by the fork, "you have more on the double fork because you have two places where it might hang instead of one place with the single fork." Mr. Baker reported he had found his trouble with jerk-ins elsewhere than the filling forks, usually in the boxes or the pickers; that "we have special times that we go over our shuttles, box fronts, pickers and similar parts." He said these parts are inspected carefully every Tuesday. Mr. Thomas expressed the opinion that double filling forks are all right where feelers are not used, "but if you use double filling forks in connection with feelers, they will give you trouble."

Mr. Lockman said he does not use feelers, and asked for a further definition of what the question meant by jerked-in filling. Mr. Crow said it referred to jerk-ins when the bobbin transfers. "A high bobbin in the shuttle, one just a little bit high, or to the right or left, or too low, will do that," Mr. Lockman said, "and also if the shuttle is narrower than it should be that will result by cramping the filling. When you throw it out before it runs clean you will have a looped place."

"I agree that the Stafford thread cutter has done more to correct this trouble than anything else I know of," said Mr. Crow. "However, we have the Stafford thread cutter on every Draper loom we have, and still we have a certain amount of jerked-in filling."

Mr. Lockman added that he had failed to mention that too much power on a loom will cause the shuttle to bounce; and also too slack a box and a loom picking too late as other possible causes. C. H. Lockman, of Cowpens, pointed out that, "sometimes the thread cutter is not working good and will chew

the yarn and not clip it off and then the shuttle will pick it up and jerk it back in. In order to prevent that you must have good shuttle boxing and good loom fixing. Lots of times the front box plate is a little high on the opposite lay end and the filling will catch in that. You can put in a long cam which gives it further to drop."

"On that outgoing shuttle," said Mr. James, "you have a tail from the knife to the shuttle eye. I find the best thing is to keep the quill can empty so the tail will have further to go."

Mr. Lollis expressed the opinion that if a fork is properly set up, it hasn't anything to do with jerked-in filling.

Bunches and Bunch Builders

"What benefit, in the weave room, are bunch builders on the spinning frame?" was the chairman's next question. Mr. Henderson stated that bunch builders are indispensable where feelers are used "if you have any regard for the waste." Mr. Thomas said that with the No. 19 feeler, he found he got more waste without than with a bunch builder, not changing from the filling fork.

"We have bunch builders and feelers," reported Mr. Baker, "and we have some heavy filling, 2.90s, soft twist, and we cannot run a bunch builder on that because lots of times where you are not running feelers it will come off in wads."

Mr. Henderson stated that his answer referred entirely to the Midget feeler and not to the older types.

Methods of Conditioning Yarn

"What is the best method of conditioning filling yarn?" was next asked by Chairman Crow. "The best method we have ever been able to find is the Hygrolit system," replied W. E. Baker. "It will absolutely set the twist better than anything we have found yet, and it eliminates a lot of the breakage." He added that prior to installing this equipment he did not use anything but water in conditioning his filling.

Mr. Crow and Mr. Wood were the only ones present using steam, for conditioning filling, it was indicated in answer to an inquiry.

"We have tried steam, warm water, and the Hygrolit system," said Mr. Lollis of Ware Shoals, "and I find that the Hygrolit chemical will come nearer to setting the twist in filling than anything I have tried yet."

Mr. Wood asked those using this system whether any trouble is experienced with rust spots, and the reply was that rust-proof rings prevent this trouble.

"We use an emulsified oil that the bleachery fixes up for us," said Mr. Bolt. "There is just enough oil in it so it doesn't cause rust. We use just an ordinary quill. I can let them set over the week-end, and it does not rust the rings on the quills. It helps us more on Monday mornings than any other times, especially on cold, dry days it decreases the sloughing off. I let my batteries run empty and then I condition this filling before putting it in, and I think the matter of conditioning is worth the price just helping you get started on Monday mornings. And it does help in the breaking strength of the yarn, and you will not have any kinky filling."

Mr. Bishop expressed the opinion that "we have had more filling breaks after using the Hygrolit than before, when we were not conditioning the yarn at all. I think the conditioning is a-hurting us a whole lot." Mr. Thomas offered the suggestion that no mill try to carry conditioned filling over the week-end.

J. M. Jewell, of Saxon and Chesnee Mills, stated that in one mill he does not use any conditioning, where he has soft twist filling, but in the other mill they did have trouble and rigged up a small machine with a metal apron and an arrangement that sprays water on the filling. In the water he uses a small amount of chemical to eliminate kinky filling.

In regard to carrying conditioned filling over the week-end, said Mr. Lollis, "you usually have to get the batteries empty, but we have a good humidifying system with automatic controls, and late Sunday evening about 7:00 o'clock we start up the humidifiers and let them run until they cut themselves off, and we leave our batteries full, and we have mightly little sloughed-off filling on Monday mornings." Chairman Crow also commented on the value of starting up the humidifiers on Sunday nights.

Regarding the whole matter of conditioning filling, Claude H. Lockman of Cowpens said "if you will give me a few thousand extra quills, and let me age the filling, I would rather have that than all of the conditioning systems you can mention."

F. D. Lockman of Lockhart pointed out that the thought of treating the humidifier water with some kind of chemical to soften it and make it penetrate the yarn better is worthy of careful consideration. He is working on this, he said, with a preparation worked out at the mill, containing caustic soda or caustic potash made into an emulsion. "You must be careful, however," he said, "because if you get it too alkaline you will have trouble with the rings in the spinning room; the yarn will fuzz up like a white 'possum."

"Which will cause the shuttle to last longer—a front binder or a back binder?" was the chairman's next question. "I would say without question that a back binder will help the shuttle life more," said Mr. Henderson. "With a front binder you have a shuttle made that is off balance, tipping to the back." F. D. Lockman agreed that the back binder will give a longer shuttle life.

After a brief discussion of a problem submitted by Mr. Wood as to loom settings under certain conditions, the practical discussion was concluded. Mr. Crow introduced Fred L. Still, chairman of the board of governors of the parent Southern Textile Association, who spoke briefly, and Secretary Hill of the Association announced that on Friday evening during the Textile Show in Greenville, the association would conduct a dinner-meeting for its members and friends, with entertainment and speeches. The group at Spartanburg voted unanimously in favor of repeating the practice of holding the meeting as one session, on Saturday, and left the date and place of the next meeting, to be held probably in the fall, to the selection of the chairman and secretary.

Southeastern Development Board to Promote Section's Resources . . .

By Howard E. Coffin

Chairman of the Board, Southeastern Cottons, Inc., and Southeastern Development Board

THE Southeastern Development Board is a co-operative effort of Virginia, North Carolina, South Carolina, Georgia, Alabama and Florida to promote in every way the economic resources and advantages of the Southeast. Its program falls under four major classifications: Agricultural, industrial, recreational, and attracting permanent settlers. The movement resulted from serious thought given about a year ago by a small group of business men, representing the states named, to the possibilities of fully developing the many resources of the region. We gathered facts and methods of promotion and development in other sections of the country—especially California, Minnesota, New England and Michigan, and reached the conclusion that the adoption of a similar program by the southeastern states would produce equally successful benefits. We concluded that:

Mr. Coffin

1. A co-operative effort by the individual interests of the area is far more profitable than a dog-eat-dog policy. 2. That a centralized development program is far more economical through elimination of duplication of effort and overhead and more effective because at no increase in total expenditure a much larger sum is available for effective advertising and promotion than through numerous related efforts. 3. That the billions of dollars spent by the vacationist do not go only to the operators of resorts and others who cater directly to these visitors, but are spread out to the benefits of all classes of population through taxes, labor, purchase of supplies to serve the visitors and their own direct purchases. 4. That the vacationist, acquiring first-hand knowledge of the region he visits, frequently becomes a permanent settler and thus is the advance guard of industrial, business and agricultural development. 5. That other sections having fewer advantages in climate, beauty of scenery, historical and romantic interest and business opportunity, have shown remarkable returns upon moderate investments of effort and money in intelligently planned campaigns to promote the common welfare.

Our organization proposes to discover profitable crops to be grown in the Southeast, and work out a program of crop rotation so that not only will the soil be enriched, but we will not be dependent on one crop. We desire to stimulate standardization of products—to improve the quality of farm and dairy products—also livestock. We will make a study of successful co-operative marketing organizations in other sections, and suggest the benefits of their study to the farmers of the Southeast.

We will conduct a study and survey of industry in the six states, and determine what factories and businesses are making good and offer co-operation to make them even more successful. We will not be interested in inducing factories and plants from other sections to come in an already overcrowded area in that particular industry. We will devote more time to studying the causes that are retarding the products manufactured and grown in the Southeast and set about in a co-operative and united way to correct the trouble. We will serve, for example, as a planning and stimulating body to encourage the development of latent and unknown resources, such as the development of slash pine for the making of newsprint and other cellulose paper products; the development of products from the tung oil tree, etc.

The advantages of adequate promotion of our attractions of a recreational nature cannot be too strongly stressed. Southern California, Minnesota, New England and Michigan have led the way. In the New England states, with a short vacation season and an industrial section, the recreation business last year amounted to over $500,000,000, according to the New England Council. Governor Curley of Massachusetts states that the Bay State alone expects $200,000,000 from the tourist or recreational business this coming season.

With these facts clearly in mind, our small group interested and brought into co-operation with us an increasing number of private citizens and public officials. We believe our program, to have permanent success, must be continuing; it must be sustaining over a long period of years. And to have continuing and sustaining effect, we think it should be supported publicly and privately.

We are now raising a $50,000 working fund to complete the organization in each state, and to survey the resources of the section to determine what we have to offer and what we can do to improve conditions. At an organization meeting in Atlanta last November, officers were chosen as follows: Howard E. Coffin, Sea Island, Ga., chairman; W. States Lee, Jr., president, W. S. Lee Engineering Co., Charlotte, president; John T. Alsop, Jr., mayor of Jacksonville, vice-president; and Jackson Matthews, Atlanta, executive vice-president. Six vice-presidents representing the six states, will serve as chairmen for the state organizations.

We have a big job ahead, calling for continuity of effort over a period of years. It is a worth-while job, and pulling together with sincere teamwork, we are certain to succeed.

CURRENT TEXTILE TOPICS ....

Talk of the Month

THIS year started off with much hopefulness, but latent fears, possessing the cotton manufacturers. The hopes were bred of a general and spontaneous outburst of consumer business that made an auspicious start to the textile industry. The fears were grounded on outside influences which have been enumerated before, such as the profit-preventing processing tax, the growing competition from abroad and the uncertainties hinging upon the government program. But strangely enough, an unforeseen element came into the picture as the first complicating influence of the year, viz., the gold-clause issue.

Monetary complication first upsetting influence of year

Even against this element the industry went ahead with courage derived from the momentum of good merchandising in the wholesale and retail trades. The ramifications of a situation such as the long-suspended wait for the Supreme Court decision are unavoidably widespread. They do not directly affect the ordinary individual in his day-to-day dealings, so consumer trade was maintained at a healthy pace. This was conducive to the creation of a potential further good backlog of business for producers, but at the same time of a feeling of caution among converters. This kept a volume of business in abeyance for weeks and the usual result of pressure on values in the goods market was noted.

Progress on measures by the Administration affecting the position of the cotton industry, because of their political nature, is slow and March was reached without significant developments. Meantime, the report of the Bureau of Labor Statistics in late January, showing "an overwhelming compliance" of the industry with the provisions of the code demonstrated that cotton manufacturers have played ball in the face of adversity. It also indicated conclusively that relief measures are necessary to the furtherance of the Administration program itself if the cotton industry is to continue to aid the recovery program. The Federal Trade Commission findings were that the industry was losing money in July and August of last year, a circumstance which has not changed since.

Such a condition is not only a drag upon the cotton industry but upon other lines which must move normally for a healthy economic recovery. The durable-goods industries have been a sore spot so far in the recovery. Speaking at a recent hearing of the NRA, Robert R. West, president of the Riverside & Dan River Cotton Mills and member of the Cotton Textile Code Authority, set forth clearly this interrelationship of industries. "There is," he says, "a contribution which our industry and others, which have restored their normal employment, can make to the problem of unemployment—it is through a resumption of the normal purchase of services and equipment for replacement and improvement which they make from the service and durable goods industries. But there is neither confidence nor ability to take this course if there is not some profit to establish credit or to furnish the necessary funds to carry on such work."

While Francis Gorman has made threats which the industry cannot ignore concerning another big strike by the U. T. W., there is evidence of an improving position for mills with regard to labor. The workers have had a dose of heavy loss from the 1934 debacle, the public has been aroused and there are conclusive signs that the Administration has altered its attitude toward the big unions. The President, in a letter to Charlton Ogburn, counsel for the A. F. of L., let it be known that the government and not the union is the controlling power in the NRA. His advocacy of the principle of proportional representation in the automobile case was hailed in the textile industry as promising for labor relations in the mills. And the announcement by the U. T. W. president that no strikes would be sanctioned except by written consent of himself or the international secretary offered promise that radical leaders would be curbed.

What the government will do with the processing tax, in view of the persistent agitation for its abrogation and the demonstration of its deleterious effect upon the cotton industry, remains to be seen. Meantime, several manufacturers are calculating upon the possibilities of its being declared unconstitutional. This is clear from the filing of claims with the AAA for refunds of taxes paid by them under the act. The processing and floor taxes have been paid under protest, because of penalties faced under the law. Whether removed by compulsion or by voluntary action, the abrogation of the tax is essential for relief from a factor creating consumer resistance and depriving cotton manufacturers of their natural advantage among textiles.

MONETARY affairs anticipated the impending and expected political developments as a paramount issue in the cotton manufacturing situation this year. The merchandising of finished cotton goods by retailers for the first two months of the year has been of a kind that normally would have reacted favorably upon the mills, both as to volume of business and character of prices. Unfortunately the gold-clause case came in to upset the business of mills by fomenting caution among secondary distributors of goods, even though retail stocks were being consumed steadily and the outlook was favorable for at least a few months.

New England Mill Situation

Underlying conditions even in the face of this obstructive influence remained sound from the standpoint of ultimate volume of business, but with the

large buying of converters and wholesalers seriously interrupted, the possibilities of bringing the market into profitable price levels had another setback. Consumer buying of finished lines was such as to warrant confidence in a renewed active buying of unfinished fabrics upon announcement of the Supreme Court decision on gold. It was felt that conditions were favorable to many weeks at least of real activity.

In lieu of normal business, meantime, this section has been concerned with political and economic factors of far-reaching consequence as bearing on New England mills. These embrace particularly the processing tax and Japanese competition. Not only has the processing tax come under scrutiny in the widespread survey now being undertaken through the auspices of chambers of commerce in New England, acting jointly with the New England Council, but legislative bodies have acted on it. The tax has been attacked in Senate sessions both in Massachusetts and Rhode Island, as jeopardizing to the successful continuance of the cotton industry. Congress has been memorialized, with a request for repeal of the tax.

Public spirit has been aroused throughout New England by the number of mill liquidations. "This heavy burden leads to the avenue of liquidation," said Frank W. Dunham, manager of the Fall River Chamber of Commerce, "and means for New England depopulated communities or communities with hundreds on the welfare." Manufacturers are forced to absorb the tax, because consumers resist higher prices for goods. Mill statements in this section of the country recently have shown that the tax amounts to 9 or 10 per cent on annual sales. Ruin of the source which is expected to yield this revenue for cotton growers is hardly the way for the Administration to promote its broad recovery program, however much it may be necessary to aid the grower.

An incident of significance in the competition for foreign goods business is a report that the Arkwright Corporation of Fall River is moving part of its machinery to Argentina. The American industry has been watching Japan usurp the trade of neighboring markets to the south of this country. Frank T. Ryan, vice-president of John J. Ryan & Sons, Inc., cotton dealers of Boston, New York and Greenville, at this juncture suggests that the only way to relieve this situation is to use Japanese tactics. A federal subsidy, he predicts, would quadruple our exports of cotton goods. He figures that the cost to the federal government would be about $19,137,000 and that "there would be offsets in the way of increased employment, consequent diminishing of the necessity for relief funds and greater purchasing power."

Recent casualties in this district include the start of liquidation of a great corporation organized in 1851, the B. B. & R. Knight Corporation of Rhode Island. Officials of the company attribute the decision to liquidate to unimproved business conditions and the burden of the processing tax. The several Knight mills since 1920 have had payrolls aggregating over $25,000,000. In 1920 the mills were sold by the Knight family for between 15 and 20 millions. Losses have been the lot of the mills, however, for most of the subsequent period.

It was stated in the New York Journal of Commerce that "the passing of this great unit, following so soon after the breakdown of the original M. C. D. Borden holdings in Fall River, marks the definite end of an era of great enterprise and substantial earnings". As to the Borden property, at the time of writing it was announced that the machinery and equipment in the cotton mills division of the American Printing Company at Fall River, one of the leading units of production in the country, would be sold. Plans were rapidly being formulated for the sale. There had been much speculation on what would be done with this great property of pioneers in American textiles.

While the provisions of the NIRA were accepted at first as conducive to more equitable conditions of competition for the cotton mills, there is growing agitation here against the wage differential. Indicative of the public interest was a conference of textile representatives called by Governor Curley of Massachusetts in the middle of February. At this meeting various proposals were made for presentation to Congressmen and to the Administration. One of these was that a preference be given northern mills on the processing tax, to compensate for the differential in wage scales North and South.

What the Southern Mills Are Doing

The Textile Dyeing and Printing Corp. of America, Inc., is planning to erect at Richmond, Va., a $500,000 plant for dyeing and printing rayon fabrics, according to report.

Blackstone Weaving Co., Blackstone, Va., is enlarging its mill and will install 144 new looms, it is understood, as soon as the addition is completed.

Cleveland Cloth Mills, Shelby, N. C., are working on a large recreation park to include a community house, swimming pool, athletic field and grandstand.

The school building and theater at the Langdale plant of West Point Mfg. Co., Langdale, Ala., will be replaced immediately.

Manville-Jenckes Company recently decided to liquidate its Loray plant at Gastonia, N. C., and High Shoals plant, at High Shoals, N. C. Robert & Co., Inc., Atlanta, Ga., are the sales agents.

Parker Hosiery Mill and Dye Works, Portsmouth, Va., have purchased additional Banner knitting machines to increase production on boys' hose and anklets.

Browning Hosiery Mills, Chattanooga, Tenn., have purchased the Jacobs-Spivey Hosiery Mills, Bridgeport, Ala., and extensions and improvements will be made by the new owners.

The O. V. B. Knitting Mills, Spring Hill, Tenn., equipped with machinery purchased from Morgan Mills, Rome, Ga., have started operations.

Virginia Maid Hosiery Mills, Pulaski, Va., have installed five additional full-fashioned knitting machines.

A new one-story mill type building is being erected by Tower Hosiery Mills, Burlington, N. C., in which 12 new full-fashioned machines will be installed. The outlay involves more than $125,000.

COMMENT ON THE COTTON MARKET

New Orleans, February 18th, 1935.

THE release of the United States Supreme Court's gold clause decision removed a disturbing uncertainty of long duration. For weeks the market was under a spell of inactivity, fluctuating sparingly, but often under pressure, finally drifting into a state of stagnation until the decision was rendered when values bulged sharply. Now that the decision, of world-wide importance, has been rendered, the market will likely be influenced by developments that the future will disclose from time to time. In some quarters it is believed that the government, on the strength of the decision, will adhere to its plans for credit inflation, instead of monetary inflation, to stimulate general business throughout the country.

So far as cotton is concerned, however, the obstacle to expansion in exports of the staple is the 12-cent loan value of the American product, which is relatively dearer than prices for foreign cotton. Foreign spinners continue to consume largely of foreign growths at the expense of American, as noted by the recent following estimates:

WORLD'S CONSUMPTION OF COTTON

For five months, ending December 31st— Bales—	This season	Last season
Of foreign	5,344,000	4,615,000
Of American	4,829,000	5,682,000

On top of this, and notwithstanding foreign crops of last year being estimated at about one million bales smaller than early prospects, Asiatic and South American crops of last year promise to be larger than last year's American crop, or about 12,165,000 bales versus 9,731,000. In other words the consumption and production of foreign cotton this season promises to exceed that of American by a good margin. Of late, however, the United States government is making an effort to interest leading foreign cotton growing countries in the matter of crop control. But if loan values on the American crop, relatively higher than prices for foreign cotton, are permitted to continue, it is feared it may be difficult to interest foreign countries in proposals to control production when foreign countries are expanding their cotton growing and consuming industries by underselling American.

As to this year's American crop, that of 1935, efforts are being made to hold the acreage in the South down to about last year's 28,000,000 acres, but the general impression is that it may be larger, perhaps much larger because of the satisfactory loan value (12 cents) on last year's crop, sales of fertilizer, farm implements and mules are reported large. There have been further beneficial rains in the interior, but more moisture for sub-soil reserve is claimed to be needed in parts of the western and eastern belts.

UNITED STATES CENSUS REPORT

United States— Bales—	This season	Last season
Consumption of lint cotton in Cotton Growing States, Jan.	436,000	406,000
In New England States, Jan.	90,000	89,000
In All Other States, Jan.	21,000	13,000
In the United States, Jan.	547,000	508,000
In Cotton Growing States, six months	2,141,000	2,339,000
In New England States, six months	424,000	499,000
In All Other States, six months	110,000	85,000
In the United States, six months	2,675,000	2,923,000
Mill stocks, January 31st	1,194,000	1,606,000
Stocks in public storage and warehouses, January 31st	8,964,000	9,496,000
Stocks in mills, public storage and warehouses, January 31st	10,158,000	11,102,000
Active spindles during January	25,146,000	25,647,000
Active spindles during December	25,057,000	24,828,000

IN SIGHT, EXPORTS, SPINNERS TAKINGS AND STOCK AT ALL U. S. PORTS

Aug. 1 to Feby. 15— Bales—	This year	Last year
In sight (marketed)	7,661,000	10,771,000
Exports from U. S., incl. Canada	3,208,000	5,356,000
Spinners takings of American, world	6,540,000	8,855,000
Stocks at all U. S. ports, February 15th	2,698,000	3,602,000

WORLD'S VISIBLE SUPPLY OF COTTON, FEBRUARY 15TH.

Bales—	This year	Last year
American	6,739,000	8,670,000
Other kinds	1,989,000	2,233,000
All kinds	8,728,000	10,903,000

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

Year—	1935	1934	1933	1932	Normal
January	1.48	3.81	1.80	4.71	1.82
Nov. 1 to Jan. 31	7.34	6.85	6.13	10.87	5.05

Late Washington advices state: Despite increasing prices of food, the agricultural adjustment administration said in a formal statement that it was "not considering abandonment of any program now in effect." The AAA also said that statements that the farm prices of 14 basic commodities were 24 points above prewar parity "are incorrect."

At present, owing to the apparent satisfactory gold case decision, the smaller than earlier expected foreign cotton crops, the larger use of the foreign product, which is likely to strengthen the statistical position of outside growths, the prospect of very large spending of money by the United States government for the purpose of increasing employment in the interest of further business recovery, and the plans of the government to continue crop control in the South, and to try and arrange for crop control in the leading foreign cotton growing countries, a steadier and perhaps a somewhat higher market may be witnessed in the future. There is so much of raw cotton under government control, however, that owners may desire to sell more freely if prices work much higher.

National Cotton Week Poster Selected

National Cotton Week Poster Selected

Selection of the official National Cotton Week poster which will soon be available for distribution to merchants, manufacturers and others participating in the event now scheduled for May 6 to May 11 has been announced by the Cotton Textile Institute.

Featuring the fact "Everybody Uses Cotton," this year's poster pictures Uncle Sam perched on a bale of cotton against a background of hurrying crowds—the whole symbolizing the importance and universal appeal of cotton to men, women and children in every walk of life.

All sections of the United States and the leading merchants of those sections are represented among the more than

30,000 stores which will participate in the 1935 National Cotton Week with special merchandising campaigns and promotional programs emphasizing the myriad uses for cotton in the wardrobe and throughout the home.

Since it was first observed five years ago, National Cotton Week has achieved an important place in the retail trade calendar, being generally accepted as marking the formal opening of the summer season. Evidence of the importance which now attaches to Cotton Week is found in unusually active interest on the part of wholesalers who in greatly increased numbers have advised the Institute of their intentions to participate and to arrange for the participation of the many thousands of small retailers they serve.

New Textile Equipment and Publications . . .

New Multiple-Draft Spinning System

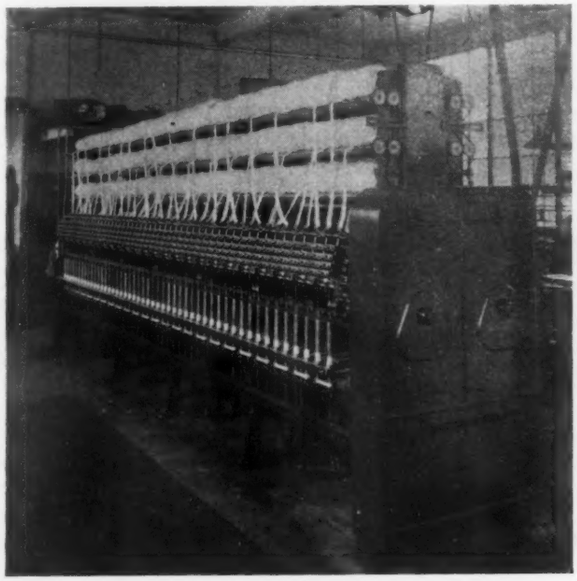
A multiple-draft spinning system which permits the spinning of cotton directly from sliver with drafts running as high as 800, has been invented by Thomas Harris of Providence, R. I., and is being developed by Harris Textile Machinery Co., 151 Georgia Ave., Providence. The first frame to which the system was applied for spinning cotton was a 4-inch gauge, 3-inch ring, 8½-inch traverse.

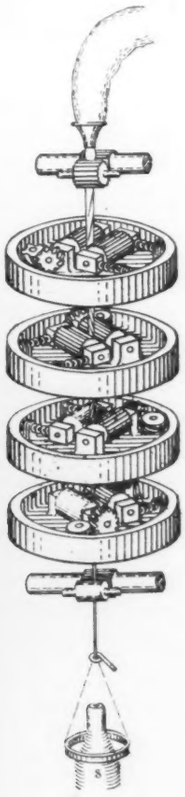
The principle on which the new system is based recognizes that the greatest difficulty in effecting a high draft is the control of the short fibers, which tend to move to the surface in roving. The Harris method holds these short fibers in position by giving the sliver, or roving, a false twist during drafting. The accompanying diagram makes clear the method by which the false twist is inserted. The drawing sliver passes downward through a trumpet hole to a pair of feed rollers. From the feed rolls it passes to a pair of drafting rolls revolving with their contacting surfaces moving downward and located in the center of a disc which is revolving horizontally to either the left or right. Just below, the strand of fiber encounters another pair of rolls in another disc which is revolving in a direction opposite to that of the first. The strand thus proceeds through two more discs, each revolving opposite to its predecessor. Finally it goes through a pig-tail guide, and down to the usual ring and traveler. The trumpet and all the roll nips are in a vertical line with the spindle, and therefore the traveler twist runs straight to the nip of the front rolls. Each pair of rolls runs faster than its predecessor, affording draft, while the revolutions of the disc insert a false twist while drafting.

As will be seen from the accompanying photograph, the supply for the frame is drawing sliver mounted in a special creel above the drafting mechanism.

A draft of around 270 is used to produce 50s to 60s yarn from a single drawing sliver. Another disc could be added, it is stated, to produce a draft as high as 800. The inventor states that, contrary to the customary procedure in which roving from the final roving frame is not as even as the drawing sliver from which it was made, in this method of drafting, with the elimination of roving, a more even and stronger yarn is produced.

Below, a photograph of the Harris multiple draft system; right, a sketch illustrating the principle of the system, which is described in text . . . . .





"Handbook of Industrial Fabrics"

Wellington Sears Co., 65 Worth St., New York City, leading commission house, have just published a most useful volume entitled "Handbook of Industrial Fabrics", prepared by George B. Haven, in charge of textile research, Massachusetts Institute of Technology, aided by Charles A. Sweet and Norman E. Horn, of the Wellington Sears organization. The book was conceived and published by Wellington Sears to meet the need for a handbook for engineers, purchasing agents and salesmen in connection with industrial fabrics, which represent a major portion of the firm's business. A foreword by Harry L. Bailey, president of Wellington Sears, points out that natural progress and development have increased the variety of industrial fabrics, and brought about an improvement in manufacturing and laboratory technique enabling the mills to meet quickly the constantly changing specifications of the industries consuming these fabrics. The author emphasizes that industrial fabrics "constitute a vast array of cloths, many of them of great strength and of heavy weight, but including also gauzes and muslins of the lightest type"—and that this group of fabrics has probably received more attention than any other in the way of technical specifications, etc. The book, then, is offered as a reference volume covering the field of these fabrics, and, issued by a leader in the field and prepared by a recognized authority, it represents a distinct contribution to textile literature.

The volume is divided into seven chapters. The first three cover Types of Cotton, Manufacturing Processes for the Cotton Fiber, and Cotton Yarn—giving brief but complete descriptions of the various cotton staples used by mills, their differences and purposes; clear but not too technical interpretations of the processes used in cotton manufacturing; and extensive information concerning yarns, taking into consideration, with adequate tables, twist, breaking strength, twisting, yarn sizes and methods of numbering, etc. The fourth chapter deals with the Uses of Industrial Fabrics, listing the varied and extensive uses to which these materials are adapted; and Chapter V furnishes Organization and Properties of Industrial Fabrics, giving in detail descriptions and definitions of the wide range of fabrics covered. The next chapter deals with Laboratory Design and Practice, describing the method, equipment, standards, etc., based on the practice of the mills represented by Wellington Sears Co., which are recognized as being leaders in this progressive branch of manufacturing. The

last chapter, covering Specifications and Test Methods, records the standard and officially adopted methods of testing and specifications set up for each type of fabric.

The volume is well illustrated by interior views of plants, etc., these being mainly photographs in some of the mills represented by Wellington Sears Co. The book is handsomely and durably bound in leather, and contains 538 pages. It fills an immediate need for a reference work of the nature indicated, and the publishers are to be congratulated upon their vision and progressive attitude in preparing and making available so worthwhile a publication. Copies are available at $2.00 each so long as the supply for general distribution lasts.

* * *

Spinning Frame Levers

M. & M. Textile Lever Co., Box 1572, Greenville, S. C., have introduced the M. & M. levers and hooks for spinning frames. The manufacturers point out that the proper weighting of the top roll on a spinning frame is important, that if levers are not kept in a horizontal position, the proper weighting will not be maintained and bad work will follow. These new levers, it is pointed out, have a much larger bearing surface, reducing wear to a minimum, and eliminating the necessity of adjustment, and keeping the lever in a horizontal position. The results described are saving of top roll covering; stronger and more uniform yarn; less end breakage and less waste; and increased production. As will be noted in the accompanying illustration, the construction of the lever at the point where the stirrup rests is designed to prevent the stirrup from being forced forward against the steel roll, thereby eliminating undue wear on the stirrup.

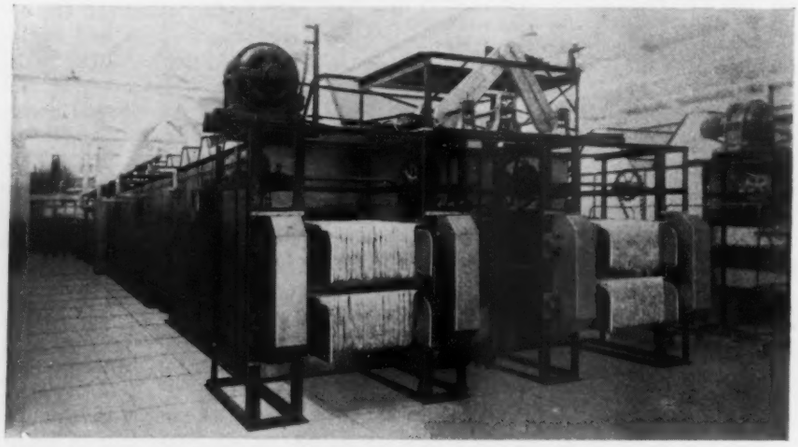
Two views of the M & M lever for spinning frames . . .

Corrosion-Proof Rayon Dryer

The Philadelphia Drying Machinery Co., 3351 Stokley St., Philadelphia, Pa., have announced the development of a corrosion-proof dryer for rayon, employing aluminum heating coils and structural aluminum throughout for the frame. The manufacturers point out that during all stages of rayon manufacture, corrosion prevention is an important factor, since iron or rust particles of very small dimensions, if allowed to come in contact with the wet material, produce spots on the material which make it unfit for use or put it in a lower quality group; also, that the drying itself, often under conditions of high controlled humidity, produces an atmosphere extremely hard on steel dryer constructions.

The first step in the construction of the new dryer, it is explained, was the use of aluminum heating coils, which eliminated one large source of contamination from rust particles, in addition to providing better heat transfer due to the high conductivity of aluminum. Structural aluminum is used throughout for the frame, making a lightweight structure practically as strong and rigid as the steel frame which it replaces. Aluminum sheets are used for all internal partitions, as well as for the inside sheets of all insulating panels. Steam coils and coil supports are also of aluminum construction, and aluminum bolts are used to assemble the framework. All surfaces which come in contact with the recirculated, heated and humid air are of aluminum or aluminum alloy construction; these alloys were selected to secure alloys free from copper. The manufacturers point out that the added cost of this construction is justified in lower maintenance costs, freedom from corrosion, longer machine life, and elimination of contamination of the product.

New corrosion-proof dryer . . .



Portable Electric Tool Catalog

Skilsaw, Inc., 3310-20 Elston Ave., Chicago, Ill., have issued a new catalog descriptive of the company's line of portable electric tools. The line includes portable electric hand saws, belt sanders, ball bearing electric drills and blowers and suction cleaners, etc. The bulletin describes each product, giving specifications, prices, etc.

J. R. Kindig, Red Rock Bldg., Atlanta, Ga., was recently appointed representative of this company, covering the states of Florida, Georgia, Alabama, Tennessee, and North and South Carolina.

* * *

Dust-Tight Lighting Fixtures

Benjamin Electric Mfg. Co., Des Plaines, Ill., have placed on the market the Type II-G dust-tight lighting fixtures which satisfy, it is explained, all underwriters' requirements in Class II, Group G hazardous locations (flour and feed mills, grain elevators, sugar, starch and cocoa mills); Class III (cotton and textile mills, cotton gins, cotton seed mills and woodworking plants); and Class IV locations (warehouses for cotton, cotton linters and waste, sisal, benequin, ixtle, hemp, tow, oakum, excelsior, etc.) These fixtures are also weather and moisture-proof, it is pointed out.

* * *

Centrifugal Pump Catalog

Lawrence Pump & Engine Co., Box 70, Lawrence, Mass., have issued a new bulletin covering their centrifugal stock pumps. These pumps, it is pointed out,

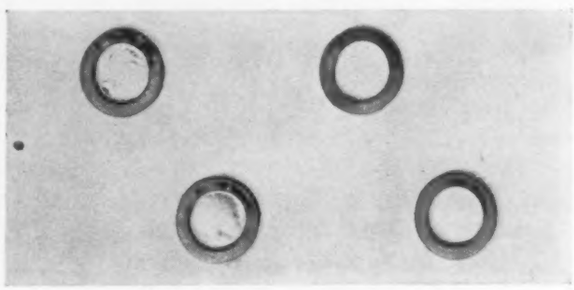
are each constructed to comply with individual operating conditions, and the bulletin describes the features which are flexibly designed into them. The pump's heavy construction and large passage areas, it is explained, adapt it particularly to handling liquids of a high percentage of solids, when a low velocity is needed.

* * *

New Method for Testing Chemical Resistance of Paint Coatings

The Sherwin-Williams Company, Cleveland, Ohio, announce the development in their laboratories of a new method for testing chemical resistance of paint coatings, instead of the former method of immersing a panel in a reagent and that of putting several drops of a reagent on a panel and covering with a watch glass. The new method is described as follows:

An airtight seal is made of rubber rings cut from $\frac{1}{16}$-inch inner tube stock. The inside diameter of the rings is $1\frac{1}{8}$ inches and the outside diameter, $1\frac{3}{4}$ inches. After cutting, the rings are immersed in a melted mixture consisting of 50 parts paraffin, 20 parts carnauba wax, and 30 parts Halowax 1013. Centers for the rings are marked off on the panel to be tested and the panel is placed under a hot water tap reverse side up, to prevent chilling of the wax when the dipped rings are placed on the panel. Excess wax is drained off the rings before placing them on the panel, after which they are pressed at several points to insure complete contact. As soon as the wax has cooled to the point where the surface gloss is lost, a 2,000-gram brass weight is applied to mold the top of the wax to a smooth level surface.



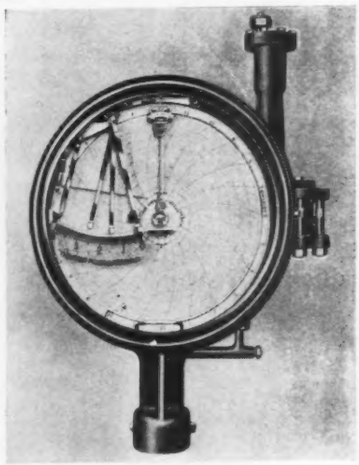
Left, showing the new "ring" method of testing paint coatings . . . .

One c.c. of reagent may be poured into each ring by means of a pipette. Microscopic slides, 3x2 inch, are used as covers, and since they are of colorless glass, many observations may be made without removing them. When an inspection of a particular spot is to be made, it is a simple matter to absorb the reagent into a swab of clean cotton to examine the paint surface. The wax mixture used is not affected by any water soluble, common acids or alkalis. Concentration may be controlled by means of the seal, and all notations on reagent, film, time and results recorded beside the ring on the panel, and the panels kept for reference or observation. This procedure, it is pointed out, permits the testing of several reagents tested at the same time on a panel.

* * *

New Foxboro Meter

The Foxboro Company, Foxboro, Mass,, have designed and are producing a new universal meter designed to measure any fluid under any industrial condition, which has a flow rangeability of ten to one. The charts have uniform graduations permitting easy reading of records, and temperature and pressure records may be recorded on the same chart with the flow. With a multiple pen recorder, all pens move about the same center of rotation. A new mechanical integrator, showing the total flow on an easily read counter, has been built especially for this meter. The pressure compensator furnished on the universal meter wherever widely varying static pressures make it otherwise impossible to get accurate measurement, corrects both the record and the integrator reading for all variations in static pressure, and does this instantaneously, automatically, and continuously.



New universal meter . . .

The meter is protected from overrange flows or incorrect manifold valve manipulation by standard Foxboro check valves. In addition to the recording and integrating features, the meter can be furnished with a transparent indicating scale that makes it possible for the flow to be read at a glance.

* * *

Scheuer Issues 1934 Chart

Scheuer & Company, textile brokers and consultants, 72 Leonard St., New York City, are distributing the 1934 edition of their Comparative Textile Chart. This compilation has come to be looked upon by the industry as an official record, which is the only document of its kind issued, and its scope and clarity make it most valuable.

The chart includes a price history of 64/60 38½-inch 5.35, the standard cotton print cloth of the market, covering the years 1913 to 1934 inclusive. It records the highest and lowest mill margins and prices attained during these years as well as the cotton crop and price movements. A record of high and low prices of a wide range of staple cotton fabrics is also included, which covers the preceding twenty two years.

A new feature is the addition of rayon fabric statistics—these, too, show raw material and mill margin figures.

The company has included an important schedule which reveals what 1934 prices mean in terms of pre-NRA and AAA conditions. They have deducted from actual prices the arbitrary imposts occasioned by these enactments. Thus a quick and fair comparison can be made with the figures of 1932 or any other previous year.

The chart is attractively mounted on a heavy cardboard base and is constructed so that it can be conveniently hung or framed.

* * *

"A Story of Man-Made Rubber"

Under the title of "A Story of Man-Made Rubber," the first really popular description of DuPrene is given in a small illustrated booklet just issued by the rubber chemicals division, E. I. du Pont de Nemours & Company, Wilmington, Del.

By way of introduction of the subject it is stated: "In November, 1931, we announced that extensive research had culminated in the successful production of a synthetic rubber, 'DuPrene'. Since that time repeated applications of this material to industrial use have stimulated public interest in it. A number of technical papers have appeared in scientific magazines describing its characteristics, methods of synthesis, and chemical composition, and much information has been fur-

They used to tear down drives low stretch and high flex life BUT NOW YOU CAN MAKE THEM

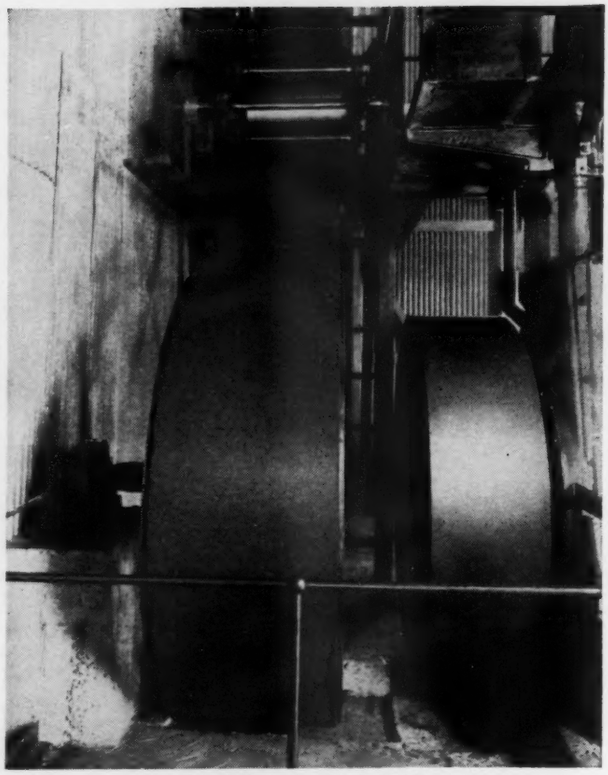
THE best proof of the savings and spectacular performance which Goodyear COMPASS Cord belts have been delivering is the trouble a wise man would take to install them.

Experience showed that—once installed—they outlasted other belts by as much as *ten to one.*

So, when necessary, plants tore down drives and tore out walls to put this money-saving belt on the job.

But the G. T. M. (Goodyear Technical Man) wasn't satisfied to let it go at that. There must be some way—he figured—to settle this difficulty—some way to install the belt so it wouldn't have to be tailor-made for every drive.

So he put the problem up to headquarters, and now we announce the answer—a *patented vulcanized splice*—with complete instructions and equipment for making these belts endless on the job.



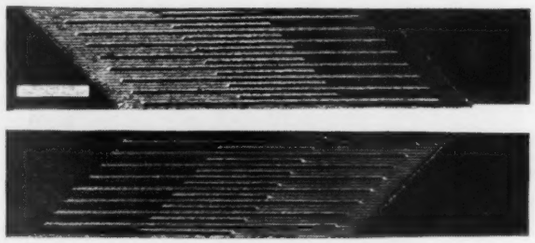
A problem for the G.T.M. —how could an endless *belt be installed here?*

Simple, when you know how

How this is done—how cords can be dovetailed together—is shown by the diagrams pictured here. And the result—installed on the drive—is still an *endless* belt, with all the advantages which make the Goodyear COMPASS Cord belt *the first major improvement in belt design in fifty years.*

—even remodel walls to get the of Goodyear COMPASS CORD ENDLESS BELTS— ENDLESS RIGHT ON THE JOB!

It gets its long life and freedom from ply separation from the fact that it has *no load-carrying plies* to cause internal chafing at the pulleys. The load is carried by a single layer of cords or "ropes," laid side by side,



The Goodyear patented splice—notice how cords are dovetailed when ends are put together. No chance of splice failure here

"floated" in rubber, and sheathed in a protecting envelop built for *long wear.* This envelop is designed to stretch longitudinally, throwing the load on the cords.

In addition—this construction makes *the most nearly stretchless belt known.*

COMPASS Belts, so designed, are 25% thinner than belts of equal horsepower capacity—which means that they *stand up under flexing*—even on small pulley and reverse bend drives.

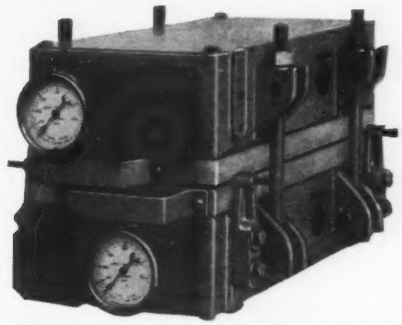
How COMPASS stands up

The case histories of this spliceless, plyless, long-lived belt include many such records as this:

"53 months unfaltering, trouble-free service on a pulp mill beater drive—*ten times the service of previous belts.*"

"Three years of stretchless, trouble-free service (and still going) on a drive where previous belts gave out at 19 months."

"33 months on an oil field pump drive—without service interruption—and still going strong. Previous belt broke five times in less than 5 months—total life only one-sixth the COMPASS belt record."



This special vulcanizer has been developed, available through Goodyear, through Goodyear distributors, or it can be purchased by customers for their own use

Such advantages are available on any drive, now that COMPASS Belts can be made endless on the job.

Why not have a talk with the G.T.M.? Just write to Goodyear, Akron, Ohio, or Los Angeles, Calif., or call your nearest Goodyear Mechanical Rubber Goods Distributor.

GOODYEAR

BELTS • MOLDED GOODS • HOSE • PACKING

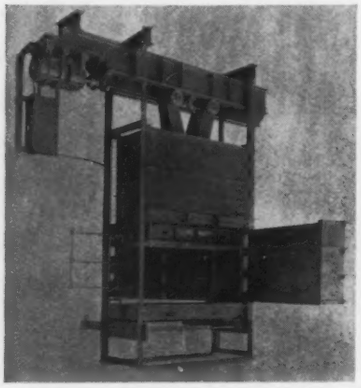
nished rubber manufacturers as to methods of compounding and processing. We believe, however, that a knowledge of the unusual properties of DuPrene compounds will be of value to every manufacturer, regardless of the product he is making or merchandising, and it is to the business man and engineer that these pages are addressed."

Of particular interest is the clear and understandable explanation of how DuPrene is synthesized from such abundant natural raw materials as coal and limestone. Other phases of the general subject of the booklet include "'DuPrene' Is Processed by Rubber Machinery,"—"Many Kinds of DuPrene Compositions,"—"Costs More Than Natural Rubber,"—"Special Properties,"—"Many Industrial Applications," and "Engineering Service."

* * *

New Mill Waste Press

Logemann Brothers Co., Milwaukee, Wis., have added to their line of baling presses a special high-speed toggle-lever baler for mill and other waste. The press is of the up-stroke type, setting through the floor, with the mechanism underneath, out of the operator's way but controlled from the operating floor. The press is compactly designed, a



New waste press . . .

geared-motor being directly coupled to the power screw. Control is by push-button starter and reverser; the press and motor are electrically protected against accidental overloading, and the press stops automatically when the stroke in either direction is completed.

In the toggle-lever mechanism, at the beginning of the stroke, the compression platen moves swiftly; toward the end the movement is slower but the pressure increases greatly. No special clutches, motor speeds or gear changes are needed to accomplish this in the toggle- lever baler, it is explained. The operator simply starts the press and can then turn to selecting his balewires, cutting burlap and preparing for the next filling.

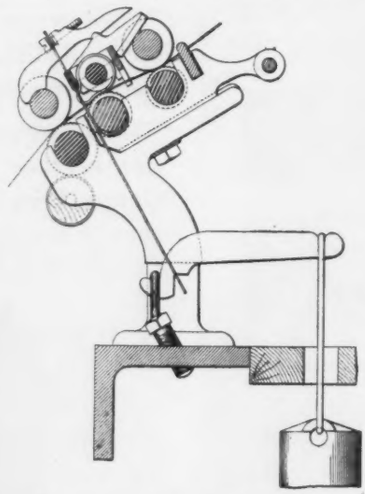
The press box may be filled through the doors or through the top, the upper platen rolling back for convenient and rapid filling. The doors, when open, release and expose three sides of the bale for convenient wiring and removal, or burlapping when desired.

* * *

New Long Draft System

A new system of long drafting as developed and presented by The Belger Company, Watertown, Mass., is of interest. It is illustrated in the accompanying sketch. This system, it is pointed out, uses positive means for holding the tail end of the fibers. It has a positive break draft which has been found necessary in spinning sheeting and kindred yarns around 20s, and 30s warp and 40s filling for print cloths, the manufacturers point out. The description continues:

"This new system of long draft does not necessitate any changes of the frame. It leaves the fluted bottom roll-



The Belger long draft . . .

ers entirely free from any additional parts but is applied in one assembly in place of the present middle top roll. This long draft assembly consists essentially of one fluted middle top roller around which two loose leather belts are wrapped. To keep these belts and the roller in position, a cradle is designed whose ends fit into the cap bar spaces of the middle top roll. This cradle is formed in such a way that the back saddle is integral with it and thus the frequent dropping and mislaying of the back saddle on spinning frames is eliminated. A steel roller with no cloth covering is weighted and produces the positive break draft which can be varied on standard spinning frames by change gears without any mechanical changes of its component parts, from 1.05 to 1.25. The open fibers are still held by the loose leather cots against the bottom fluted roll and therefore more than 60 per cent of all the fibers are positively controlled and bring the nip to within about ¾-inch of the bite of the front roller." It is understood that this same principle is also being applied to roving frames.

* * *

Booklet on Enduro

Republic Steel Corporation, Massilon, Ohio, have prepared a new booklet, No. 125-A, covering Enduro 18-8 stainless steels. The publication contains 16 pages, and is illustrated, and an important feature is a table showing the degree of corrosion-resistance exerted by Enduro stainless steel, Types 18-8, S and AA in the presence of several hundred individual chemicals, solutions and other reagents.

* * *

Knit Goods Directory

Davison Publishing Co., 50 Union Square, New York City, have just issued the 44th annual edition of Davison's "Knit Goods Trade", a directory giving late revised information on more than 2,000 knit goods manufacturers in the United States, and covering also all spinners, agents, wholesalers, chain and department stores serving or being served by the knitting industry. It is the only annual directory of the knit goods trade now being issued. The price is $6.00 per copy for the deluxe office edition; handy edition, $5.00.

* * *

Rubber Lining for Metal Tanks

Announcement of a new rubber lining for metal tanks to protect them in use against the action of acids and corrosive liquids, is made by The Goodyear Tire & Rubber Co. Important in the new development is the fact that the adhesive with which Plioweld is applied to tanks, is a rubber derivative, applied to the clean metal which actually welds the resilient rubber to the metal during the process of vulcanization. The adhesive itself is a corrosion resistant material affording added protection in the application. The Goodyear adhesive which is used in the application of the rubber lining to the tanks offers another new development feature worthy of note, in that it is dissolved in a non-toxic solvent so that hazards to workmen making the application are avoided. The usual thickness of this new lining is three-sixteenths of an inch, and the product is applicable to all shapes and sizes of tanks made of wood, steel, aluminum and lead.

The new lining, called Plioweld, is said to offer these advantages: effectively sealing in most corrosive liquids, hot or cold, preventing tank leaks, corrosion and waste; will not oxidize nor slough off; it will not crack nor buckle under alternate drying and wetting. The new lining is adapted to the specific service for which it is designed.

★

IT ALL BEGAN

TWENTY YEARS AGO!

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

AN IDEA . . .

In 1915, Armstrong first introduced the cork roll covering to the cotton textile industry. That pioneer covering, like most new developments, was far from perfect . . . but it was, basically, a *sound idea*. Long years of close, steadfast work with mill men followed; every single year brought forth some valuable improvement—and for this we have to thank the mill men; those who saw into the future, saw that in cork lay the answer to their requirements.

In 1924 Armstrong finally produced an entirely new covering . . . the Armstrong's Seamless Cork Cot. Progress was slow due to past failures but test frames went in here and there with results that proved cork both practical and superior.

THE FULFILLMENT . . .

With the passing of the pioneer or proving ground stage came the fight for real recognition. The fight wasn't easy, but one by one, mills went from test frames to complete cork equipment. Their roll covering bills shrank. Yarn quality was just as high or higher. Operating conditions improved.

Naturally, word spread through the industry. Meetings hummed with discussion of cork and mill men learned to understand it. Early failures lost all significance as mill after mill switched over and cork "proved out" in actual large scale production on all types of yarn.

The goal came in sight when each succeeding year saw more cots installed than the year before . . . even 1934, despite the shutdown for the strike, surpassed 1933. Today over 25% of the nation's spindlage is on Armstrong's Seamless Cork Cots.

and now . . . THE FUTURE

Steady improvement in quality during these years has produced today what is by far the best cork cot ever offered. And as usage increased, volume production has reduced prices to a point where there is no longer the widespread difference in first cost over old style coverings. These facts, plus the widely gained recognition of cork's superiorities gives every indication that 1935 will establish still another new record . . . *Once again the cotton textile industry has taken a step of progress through a pioneer's idea.*

ARMSTRONG CORK PRODUCTS CO. TEXTILE DIVISION, LANCASTER, PA.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Armstrong's SEAMLESS *Cork Cots*

FOR SPINNING AND CARD ROOM ROLLS

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

American Cotton Manufacturers to Meet at Augusta, Georgia, on April 25, 26, and 27

Secretary W. M. McLaurine has announced that the 39th annual convention of the American Cotton Manufacturers Association will be held at the Bon Air-Vanderbilt Hotel, Augusta, Ga., on Thursday, Friday and Saturday, April 25, 26, and 27. The regular pre-convention dinner meeting of the officers and board of government will be held at the same place on Wednesday evening, April 24, at 7:30 o'clock.

Reservations for rooms may be made direct to the Bon Air-Vanderbilt Hotel, Augusta, Ga., or through W. M. McLaurine, secretary, American Cotton Manufacturers Association, 1206 First National Bank Bldg., Charlotte, N. C. W. D. Anderson, president of Bibb Manufacturing Co., Macon, Ga., is president of the Association.

* * *

Southern Textile Exposition at Greenville, April 8-13

The time for the Eleventh Southern Textile Exposition, at Greenville, S. C., is fast approaching. The dates are the week of April 8 to 13 inclusive. The show will open on Monday morning, April 8, and continue through with sessions from 10:00 A. M. to 10:00 P. M., daily, until Saturday. President W. G. Sirrine and Secretary Bertha M. Greene, with headquarters in the Masonic Temple Bldg., Greenville, S. C., announce that since the postponement of the exposition from last Fall until April, a number of new exhibitors have been added and practically all of those originally scheduled have retained their space, with the result that the exposition next month will be exceptionally large and valuable to all mill visitors. The keen interest being displayed currently by southern mill executives in new products and equipment indicates that the show will be of unusual value to all exhibitors.

* * *

Changes in Representation for Adolff Bobbin and Hygrolit

John Klinck, 154 Forest Ave., Augusta, Ga., has been appointed representative for the Adolff Bobbin Co., Inc., Kearny, N. J., for the state of South Carolina, in addition to the territory of Georgia and Alabama, which he has covered for some time. J. Alfred Lechler has been appointed representative of the company for Tennessee, in addition to North Carolina, Virginia, etc., with the exception of the Chattanooga district, which will continue to be covered by Mr. Klinck.

Mr. Klinck likewise now represents Hygrolit, Inc., of Kearny, N. J., in the state of South Carolina, and Mr. Lechler represents this company now in North Carolina and Virginia, as in the past, and, in addition, in Tennessee except the Chattanooga district which continues under Belton C. Plowden, of Griffin, Ga., who as in the past is representing Hygrolit also in Georgia and Alabama.

These changes were necessitated by the resignation of L. S. Ligon from his connection as South Carolina and Tennessee representative of Hygrolit and Adolff. Mr. Ligon is now devoting his entire time to the Abbott Machine Company line, of Wilton, N. H.

* * *

Suggests Subsidy on Cotton for Export Goods

A federal subsidy of 1¼ cents a pound on cotton consumed to produce goods for export was suggested by Frank T. Ryan, vice-president of John J. Ryan & Sons, Inc., Boston, New York and Greenville, S. C., cotton dealers, in a recent address at Fall River.

Ryan spoke before members of the Fall River Chamber of Commerce, Fall River Cotton Manufacturers Association, Fall River Merchants Association, the Kiwanis, Rotary and Lions clubs and representative business men and labor leaders at a joint meeting in the Fall River Boys' Club.

The speaker, who spent several months in Japan studying the textile industry, pointed to the almost incredible advance made by the Japanese. To combat the Japanese in world markets a federal subsidy is necessary. He predicted that such a subsidy would quadruple cotton textile exports from this country from 200,000,000 yards to 800,000,000 yearly.

"This subsidy would cost the federal government about $19,137,000", he said. "This sum would offset the differential that exists between the Japanese wage scale of less than 50 cents a day, and the American wage scale, There would be offsets against this subsidy in the way of increased employment, consequent diminishing of the necessity for relief funds, and greater purchasing power."

Ryan asserted that this country must imitate the Japanese merchandising methods by which all the diplomatic resources of the nation are placed behind the manufacturer. He praised Joseph Clark Grew, American ambassador to Japan, as an outstanding diplomat, and said his work could not be excelled.

Regarding the question of whether American manufacturers can sell goods to foreign nations on an equal footing with Japan, Ryan said "the answer must come from the government."

He continued: "It can only be effectively solved by the government's willingness to scrap the various crop control measures that are in effect at present, and by eliminating the processing tax. Once we have eliminated those factors that are contributing to artificial high prices and costs, then we have narrowed the margin of costs that is existing between Japanese and American goods."

The Japanese government now subsidizes its manufacturers by subsidies to shipping firms so that cotton waste, for instance, can be shipped from Boston to Japan cheaper than from Boston to South Carolina. In addition, Japanese mills have the most modern machinery and operatives work longer hours. The effect is to place Japanese-made goods in foreign countries at extremely low prices.

By subsidizing American cotton textile exporters, consolidating the efforts of an aroused textile industry, "backed by the supersalesman of them all, President Roosevelt, selling and promoting cotton cloth in every nook and corner of the world, you would shortly witness the beginning of a textile wave that would carry the industry to unprecedented activity and success," the mill man declared.

Not only the government officials, but mill men, legislators, labor leaders, and civic leaders must get behind such a movement, he emphasized. To the labor leaders the cotton dealer said: "You can't get blood out of a stone. Give the mills a fair chance and the textile communities will in time enjoy prosperity, instead of rotting away as many of them are."

Japan now buys more wool from Australia than does England and soon "people will be buying imported woolens from Japan" rather than England, Ryan said. In 1932 Japan bought 2,000,000 bales of raw cotton from this country, representing 60 per cent of her needs. The cotton crop control plan reduced production and increased the price. Japan, Ryan stressed, will buy American cotton only on a competitive basis and, consequently, it is estimated that she will use only 25 per cent American cotton this year.

BEWARE OF

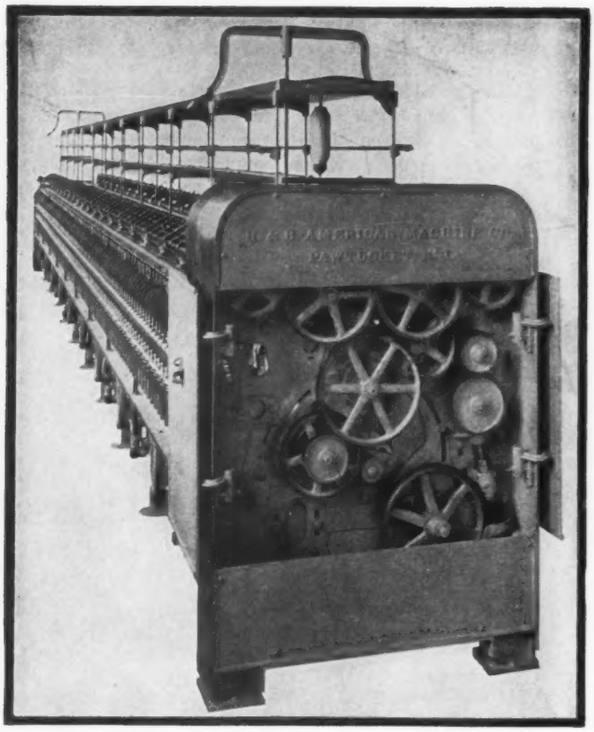
VIBRATION!

In the earthquake we see vibration in its worst form.

Vibration in textile spinning machinery is, of course, far less violent, but for that very reason more insidious. It wears out bearings prematurely and reduces the life of rings and travelers. This results in increased cost of upkeep, shorter machine life and increased production cost due to an excessive number of ends down.

H & B Spinning Frames have always been very sturdily built to reduce vibration to a minimum and the new Model B is no exception to the rule. It has the modern, heavy, box type head end with all gears extra wide faced. Samsons also are designed to provide extra strong, rigid support for the machine.

The creel (metal bound) is built with upright side rods which are securely bolted through the deck board to cast iron cross girts. Thrust of builder motion is carried on special ball bearing and collar. Ring rails are of the interlocking type, jointed at the lifting rod head. Spindles are designed for heavy duty with large oil capacity base and can be furnished with roller bearings if desired. Superpolished rings allow for higher speeds and longer traveler life.



While minimizing vibration and its effects, the Mobel B also offers all other modern improvements as listed herewith.

Further Information on Request

H & B AMERICAN MACHINE COMPANY
Cotton Preparatory and Spinning Machinery
PAWTUCKET, R. I.

BOSTON OFFICE ● 161 Devonshire Street
ATLANTA OFFICE ● 815 The Citizens & Southern National Bank Building

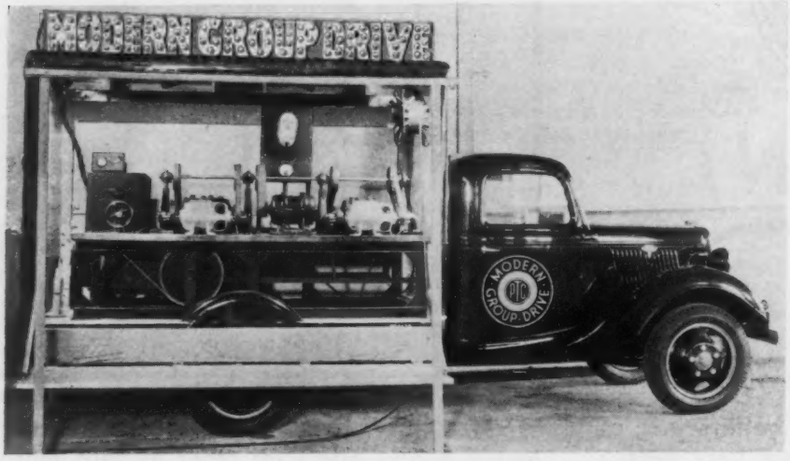
OTHER FEATURES OF THE MODEL B FRAME

Swivel Hinged Doors, easily opened and safety locking.
New Flexible Builder Motion, easily and quickly adjusted for any style of wind or length of traverse.
All Feet equipped with jack screws easily adjusted for leveling.
Samsons accurately milled for roller beams and spindle rails, and slotted to allow for adjustment of latter.
All Gears and Bearings oiled from outside through tubes and special oil cups conveniently located.
New Doffer Locking Device, simple in design and easily operated.
Cylinders are dynamically balanced.
Variable Speed Drive when specified.
Four Roller Long Draft when specified.
Reversible Tape Drive when specified.
Equipped for Large Package Spinning when specified.

H&B MODEL B
SPINNING FRAME

Group Drive Educational Exhibit

The Mechanical Power Engineering Associates have prepared and are displaying at strategic points throughout industry a model drive cost comparison exhibit that will be interesting to textile men. The exhibit consists of four units: A test unit composed of a steel frame covered with a wooden platform on which are mounted various transmission devices so arranged as to afford the use of either direct drive or modern group drive to transmit power to four generators; a large electric sign which uses the energy generated by the model; an arrangement of charts posted on a large comparison board to show comparative costs of operating direct drives as compared with group drives; and a blackboard for use in making diagrams of the power transmission hook-ups used on the direct versus group drive arrangements of the comparison of energy consumed under the two transmission systems.



The demonstration of Modern Group Drive as mounted on its truck. This will be shown throughout the South in April . . . . . .

The modern group drive and the individual motor drive, each of which may be cut in to operate the four standard type electric generators mounted on the model, are so arranged that the operator can transfer the entire load from the unit drive system to the group drive system by throwing a common clutch control handwheel and transfer the power by pressing a switch. In this way, observers may see, first, the operation of modern group drive, and second, the operation of individual motor drive. Adequate means of registering and recording the results in energy consumption, power factor, etc., are provided.

The complete display, mounted for full operation, will be on exhibit and demonstration at the Southern Textile Exposition during the week of April 8. Prior to the show, it will be shown in a number of Georgia textile centers, mounted on a Ford truck. The itinerary of this group drive demonstrator, for the week of April 1, follows:

Monday, April 1, Rome, Ga., at Milner Motor Co., from 1:00 to 8:00 P. M.

Tuesday, April 2, Gainesville, Ga., at Roberts Motor Co., from 1:00 to 9:00 P. M.

Wednesday, April 3, West Point, Ga., at Huguley Scott Auto Co., from 1:00 to 9:00 P. M.

Thursday, April 4, Columbus, Ga., at Burrus Motor Co., from 1:00 to 9:00 P. M.

Friday, April 5, Atlanta, Ga., Georgia Tech Garage, from 1:00 P. M., to 10:00 P. M.

Saturday, April 6, Atlanta, Ga., Georgia Tech Garage, from 9:00 A. M. to 10:00 P. M.

All textile operating executives and others interested are invited to attend these demonstrations at the most convenient points as shown by this itinerary.

* * *

Sonoco, Climax and Lowell Combine

The merger formed by the combination of Sonoco Products Company, Hartsville, S. C., Climax Tube Company, Mystic, Conn., and Lowell Paper Tube Corporation, Lowell, Mass., has just been announced by J. L. Coker, president of Sonoco Products Company.

Climax Tube Company and Lowell Paper Tube Corporation are well and favorably known throughout New England, the middle Atlantic states and other sections as manufacturers of high quality tubes, cores and other paper products.

Sonoco Products Company, manufacturing practically all types of paper carriers for the textile industry, is the largest manufacturer of this type of product in America.

With this merger Sonoco now has plants located at Hartsville, S. C., Rockingham, N. C., Garwood, N. J., Mystic, Conn., Lowell, Mass., and Brantford, Ontario, all plants being conveniently located to serve different sections of the textile industry.

The plants located at Garwood, N. J., Mystic, Conn., and Lowell, Mass., will be designated as the Climax-Lowell Division of Sonoco Products Company, and in order to improve service and facilitate the handling of business in New England and the Middle Atlantic States, sales and management offices for that division will be maintained at Mystic, Conn., under the direction of G. W. B. White, formerly president of Climax and Lowell. The Southern territory will be served from the Hartsville and Rockingham plants. Executive offices for the combined unit will be maintained at Hartsville.

Mr. Coker, in announcing this merger, said, "We consider this one of the most forward and constructive steps which we have taken in recent years. With six strategically located plants, we will be able to render service in keeping with the tempo of the times and meet the ever increasing demand for quicker deliveries."

With the merging of the experience, facilities, resources and personnel of these companies, the textile industry is assured a strong, dependable source of supply, equipped to give most efficient service and to meet the most exacting requirements for all types of paper carriers. Sonoco manufactures a complete line of paper carriers, including cones, tubes, cores, bottle bobbins and spools, also underclearer rolls and cork cots.

* * *

New Aluminum Paint

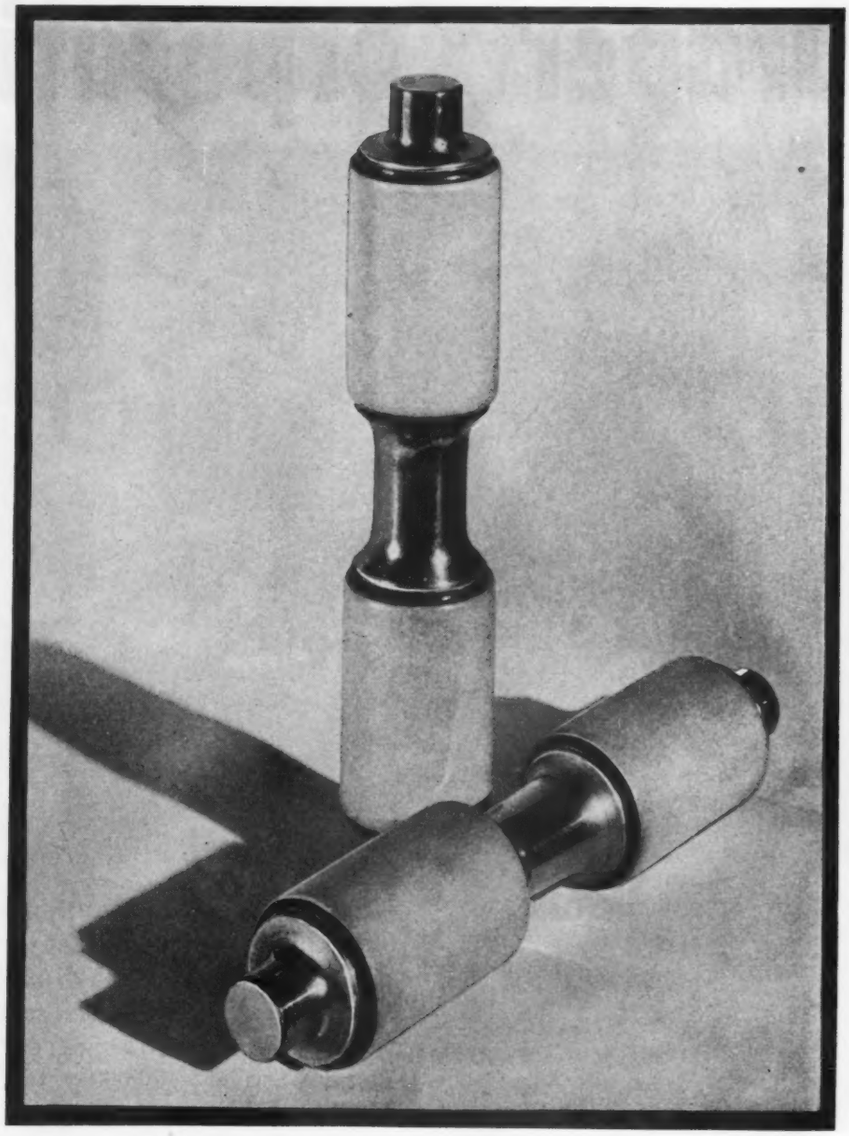
A new flexible aluminum paint, giving a scale-like metal sheathing for longer protection plus a smooth brilliant finish, has recently been announced by the Roxalin Flexible Lacquer Co., 800 Magnolia Ave., Elizabeth, N. J. The product, it is stated, has excellent water-resistant qualities, stands washing, and resists fumes, humidity, corrosion, rust, etc.; and one standard grade serves for both indoor and outdoor application.

* * *

Organic Solvents

A handbook giving a great deal of data on organic solvents and plasticizers—Bulletin No. 3—has been issued by the fine chemicals division, E. I. du Pont de Nemours & Company, Wilmington, Delaware. Technical data on nine different products that fall within the solvent and plasticizer groups are given. Included are tables covering solubility, dilution values, evaporation rates, miscibility and a summary of the properties of the several products. A number of the textile applications of these products are described.

SPINNA CALF
is resilient



LONGER SHUTDOWNS enforced by the new schedule or sudden shutdowns caused by strikes, do less harm to rolls of SPINNA CALF. This is due to its well known resilient qualities.

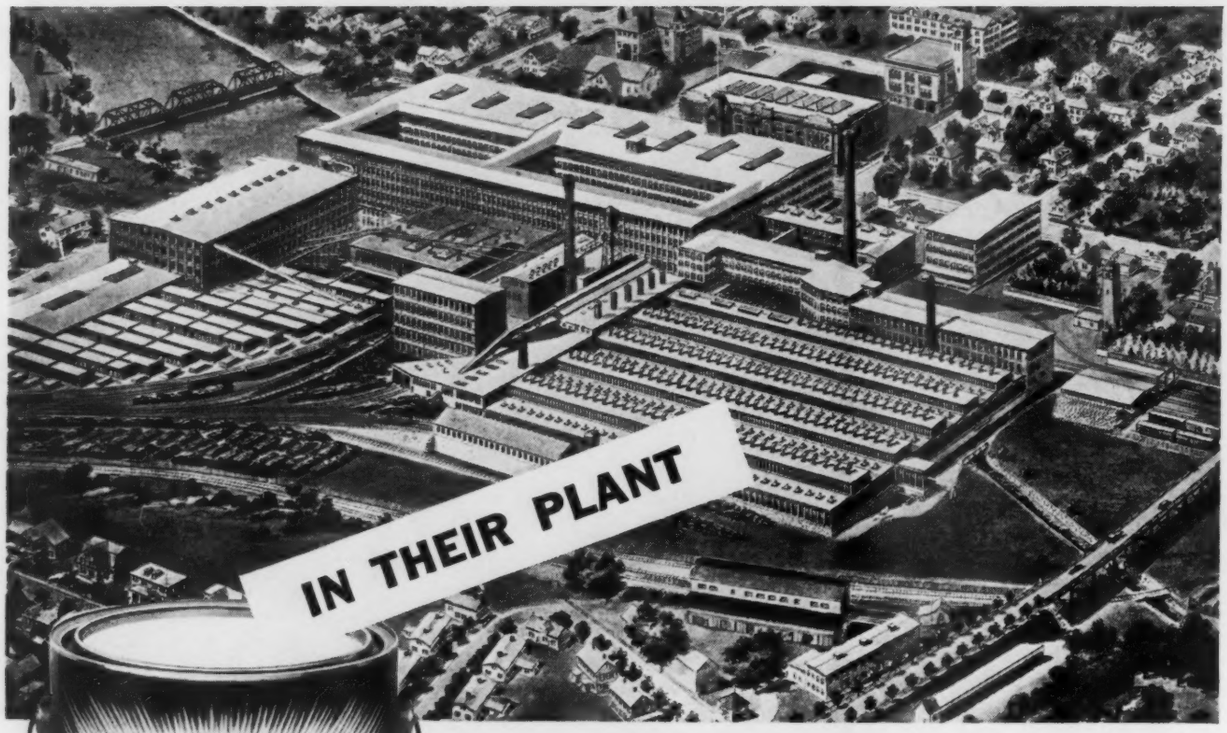
"Fabric Quality Begins With the Yarn"

A. C. LAWRENCE LEATHER CO.

Specialists in Textile Leathers

BOSTON, MASS. PEABODY, MASS. GREENVILLE, S. C.

Draper Corporation use



16 years ago, this noted textile machinery manufacturer faced the problem of painting ceilings and walls of their huge plant at Hopedale, Mass., which covers more than 33 acres of floor space. Naturally, no mistakes could be made with such a tremendous paint job. So Draper painted ceilings and walls with Barreled Sunlight—20,000 gallons of it. Were they satisfied? The fact that they have bought, since then, many thousands of gallons of this lastingly white, continuously high light-reflecting white paint speaks for itself!

Refined Linseed Oil commonly used in white oil paints. Note amber color.

The same Refined Linseed Oil after "Rice Processing." Practically colorless.

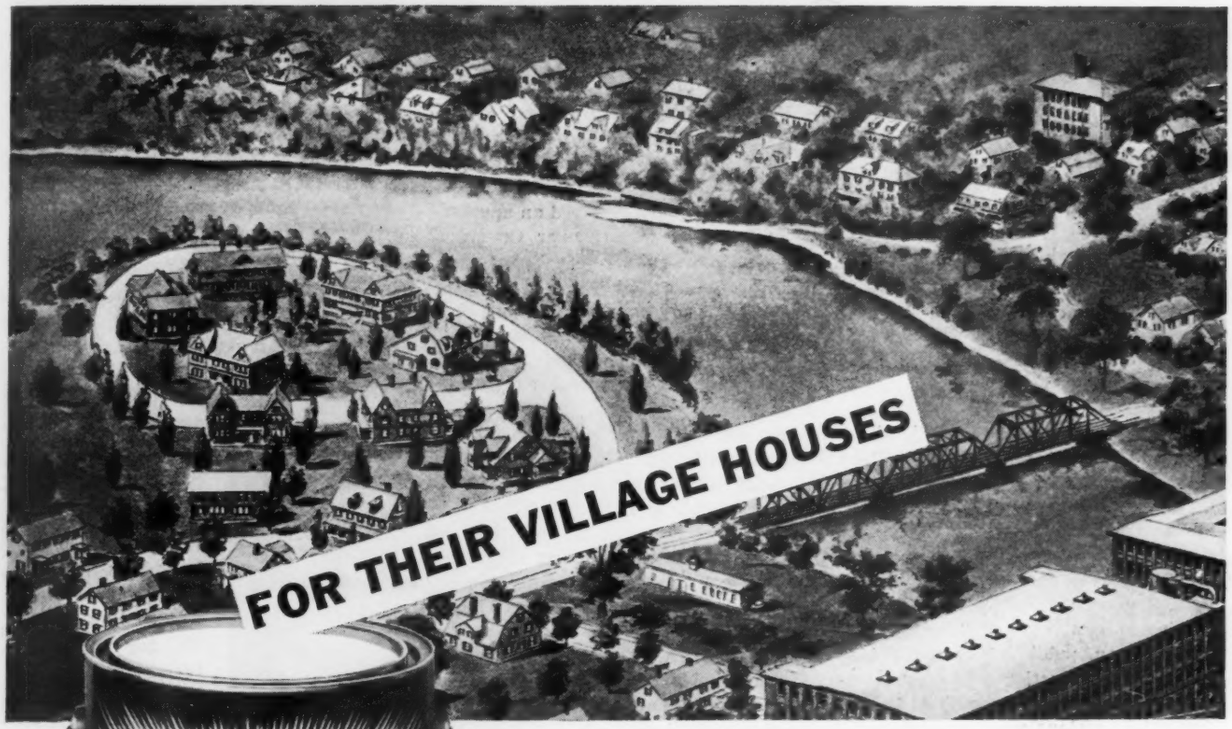
The Vial at Left contains refined linseed oil commonly used in white oil paints. The yellow color of this linseed oil disappears when the oil is properly mixed with white pigments. The white paint it makes *looks* white. But don't be fooled! The yellow is still there. Sooner or later it will appear upon your painted ceilings and walls!

The Vial at Right shows how the same highly refined linseed oil, as contained in the first tube, appears after treatment by the "Rice Process." It is almost pure white. The "Rice Processed" linseed oil is the principal reason why Barreled Sunlight remains white, year after year . . . spreads and hides better, flows more easily.

YOUR SURETY

We maintain that Interior Barreled Sunlight Gloss, the "Rice Process" White, will remain white longer than any oil-gloss paint or enamel, domestic or foreign, applied under the same normal service conditions and according to our specifications. If it does not do so, we will give, free, enough Barreled Sunlight to repaint the job.

Barreled Sunlight . . . . .



3 years ago, Draper Corporation painted their Hopedale, Mass., village exteriors with Outside Barreled Sunlight. This outstandingly handsome and long-wearing exterior paint keeps their village homes trim and neat . . . completely protects them from weathering, year after year. And the first cost was low! Time and labor were saved by the remarkable "ease of flow" of Outside Barreled Sunlight. Its tremendous spreading power saved paint. Its greater hiding power meant fewer coats, less labor to apply them.

These Noted Mills, too, are Long-Time, Large-Quantity Users

Belding Heminway Co.	*users since 1911*
Brookside Mills	*users since 1909*
Cannon Mills Company	*users since 1914*
Coopers, Inc.	*users since 1910*
Edwards Mfg. Co. . . .	*users since 1907*
The Grosvenor-Dale Co.	*users since 1907*
Hamilton Woolen Co., Inc.	*users since 1917*
Indian Head Mills of Ala.	*users since 1909*
Pepperell Mfg. Co. . .	*users since 1898*

. . . and Hundreds of Others

WE WELCOME

trial comparative tests at any time for whiteness, opacity, ease of application, square footage and length of life under equal conditions. Send today for sample cans of Interior and Outside Barreled Sunlight. Write U. S. Gutta Percha Paint Company, 8-C Dudley Street, Providence, R. I. Branches or distributors in all principal cities. (For Pacific Coast, W. P. Fuller & Co.)

Elgin Softener Corporation Takes Over the Isometer

An interesting new development in flow meters, known as the Isometer, has been taken over by the Elgin Softener Corporation, Elgin, Ill. This instrument which uses a variable orifice principle of operation for the measurement of steam, water, oil, and other liquids and gases, was developed by the Isometer Corporation of Milwaukee. This organization will now be operated as a division of the Elgin Softener Corporation.

Executive offices and manufacturing facilities of the new division will be located at Elgin, Illinois. The Isometer division of the Elgin Softener Corporation will manufacture and sell the meters and the executive personnel of the Isometer Corporation will be identified with the Elgin Softener Corporation.

* * *

1934 Textile Consumption Falls Short of 1933 Total by 13.0 Per Cent

Consumption of textile fibers—namely cotton, wool, silk and rayon—for the year 1934 aggregated 3,164,000,000 pounds, a decrease of 13.0 per cent compared with the consumption of 3,646,600,000 pounds reported for 1933, according to figures compiled by the Textile Organon, published by the Tubize Chatillon Corporation. The consumption of all fibers registered a decline from the previous year, amounting to 13 per cent for cotton, 26 per cent for wool, 2 per cent for silk and 4 per cent for rayon. With the exception of 1933, the consumption of rayon was the largest for any year on record. Silk consumption was the smallest for any year since 1924. Wool consumption was the smallest in more than fifteen years.

Based upon the figures contained in the current issue of the Organon, consumption of the various textile fibers during the past few years follows:

	Cotton	Wool	Silk	Rayon	Total
	(Units are millions of pounds)				
1934	2,662.9	240.2	61.4	199.5	3,164.0
1933	3,052.5	324.3	62.4	207.4	3,646.6
1932	2,457.6	240.9	73.7	152.2	2,924.4
1931	2,656.7	320.9	79.1	157.3	3,214.0
1930	2,608.3	268.8	77.4	117.2	3,071.7
1929	3,426.3	365.6	82.4	131.3	4,005.6
1928	3,187.4	336.6	75.9	100.1	3,700.0

Commenting upon the activities of the past year, the Organon states that "the data indicate that wool consumption declined the most from 1933 to 1934, while silk consumption declined the least. This showing is somewhat misleading, unless the already low level of 1933 silk consumption is taken into account. By the same token, the declines of cotton and rayon from their relatively high 1933 levels are correspondingly less serious."

Regarding the long term trends of the respective divisions, the paper points out that "cotton maintained its important and dominant position in consumption, wool consumption continued the decline which has been exceptionally noticeable since 1929, rayon's growth trend which has obtained since 1920 is uninterrupted, and silk consumption reached a plateau from its consumption decline which has been noticeable since 1929."

* * *

Victor H. Berman Given High Honor

Victor H. Berman, president of the Onyx Oil & Chemical Co., Jersey City, N. J., was signally honored by Governor Harold G. Hoffman, of New Jersey, from whom he received an appointment to serve with former Governor Alfred E. Smith of New York, as a member of the Palisades Interstate Park Commission. Mr. Berman is a close friend and staunch supporter of Governor Hoffman and played an important part in his recent election to the governorship.

Mr. Berman's deep interest and wide activity in many civic affairs, and his unusual executive and organizing abilities, particularly fit him for this high position.

In addition to his many duties as president of the Onyx company, his cooperative work with dyers and finishers, and his work as a member of the executive board of the code authority of the sulphonated oil manufacturers, Mr. Berman finds time for numerous outside activities.

These include welfare work for the under-privileged children; directorships in a savings bank, hospital and tuberculosis league; member of the advisory board of the American Red Cross; member of the Masonic order and Jersey City Elks; past president of the Jersey City Kiwanis and still a very active member in that group.

* * *

L. G. Manning Now With Corn Products Refining Co.

Effective February 1, L. G. Manning has become connected with the Corn Products Refining Company as associate in the development and research department on textiles. Mr. Manning has had an extensive experience in the textile field. Prior to the World War, he had been mechanic, foreman, superintendent and salesman for several of the leading textile concerns in the West and South. After service in the army, he received honorable discharge from service with two citations (including one from the French government), and subsequently spent 11 years as professor in the New Bedford (Mass.) Textile School. Most of his time during this period was taken up with development work, testing and analyzing materials and problems of the textile industry; this work bringing him in close contact with companies distributing fibers, yarns, machines and various other products, including cotton, silk, wool and rayon. In conjunction with mill work, Mr. Manning helped in solving on an average of 125 problems a year. He thus brings to his new connection a knowledge and experience in practical mill operation combined with valuable technical training.

* * *

HERBERT A. BUROW, formerly superintendent, has been made manager of the Bonham Cotton Mills, Bonham, Texas, and BASIL GIBSON is assistant manager. Both are graduates of the textile department of Texas A. & M. College, College Station, Texas.

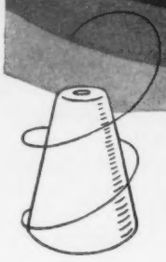
Obituary

GEORGE J. RENNIE, assistant secretary and assistant general manager of the Willcox & Gibbs Sewing Machine Co., 656 Broadway, New York City, died on Friday, January 25, while on a Caribbean Sea trip, and was buried at sea. Mr. Rennie has been associated with Willcox & Gibbs Sewing Machine Co. for the past ten years, and was well known in manufacturing circles throughout the country. He is survived by his wife, Mrs. Melita Rennie. He was a member of the New York Athletic Club and the National Arts Club, New York City.

Mr. Rennie

KENNETH MCKENZIE, widely known textile operating executive, passed away suddenly following a heart attack at his home in Chattahoochee, Ga., on Friday morning, February 8. Mr. McKenzie was 76 years of age, and had, up until his retirement a few years ago, been overseer at the Whittier Mills Company, Chattahoochee, Ga., which firm he had served for more than 30 years. He was a native of Scotland, coming to this country as a young man, after experience in the mills of his native country, and, after a few years in New England, became associated with Whittier at Chattahoochee. Funeral services were conducted on Sunday, February 10, at Chattahoochee. Mr. McKenzie is survived by his widow, three sons, A. H. McKenzie of Portland, Oregon, T. S. McKenzie of Cocoanut Grove, Fla., and Kenneth McKenzie, Jr., of Carolina Narrow Fabrics Co., Winston-Salem, N. C., and three daughters, Mrs. V. L. Bryant of Chattahoochee, Mrs. Sam Camp of Rock Hill, S. C., and Mrs. Sadie Ryan.

DYEING FACILITIES TO AFFORD YOU VARIETY IN SHADES



OUR COLOR experts have evolved a new quality in color and a variety of shades that will add considerable "eye appeal" to your line of knitted and woven products. ¶ Allow us to send one of our color experts to your mill to assist and advise in the selection of the colors for your new line. ¶ And you will find that Aberfoyle DURENE yarns, due to our new process of mercerization, absorb color with more richness and evenness, and can easily be matched to your shades, exhibiting unusual brightness, variety, and quality of color.

aberfoyle

MANUFACTURING COMPANY

123 SOUTH BROAD STREET, PHILADELPHIA, PA.

REPRESENTATIVES IN LEADING TEXTILE CENTERS THROUGHOUT THE WORLD

PERSONAL NOTES
about Men You Know

M. M. TROTTER, who has been general superintendent of the plants of Callaway Mills at Manchester, Milstead and Hogansville, Ga., has been made vice-president in charge of manufacturing of all plants of the company, including

Mr. Trotter

Mr. Collier

those in LaGrange, Ga., and Roanoke, Ala., and now has his headquarters in LaGrange instead of Manchester as previously. Mr. Trotter now has charge of the supervision of all labor at all plants of the company, and all plant superintendents report directly to Mr. Trotter.

P. N. COLLIER, who had charge as general superintendent of the plants of the company in LaGrange and Roanoke, Ala., has been made staff manager in charge of the technical branches of manufacturing at all plants of the company. He is in charge of the testing department, engineering department, deliveries and adjustment departments, maintenance department, technical superintendent, and standard job assignment department. Mr. Collier is now located in the general offices of the company at LaGrange.

JOHN W. MERRY was elected president of The Centrif-Air Machine Company, Atlanta, Ga., recently, succeeding his father, the late ROY G. MERRY, who passed away in January. C. B. CHILES was elected secretary and treasurer of the company. JOHN B. BRENNEN continues as vice-president and general manager.

JOHN A. MCCARN has resigned as overseer of carding and spinning at the Spencer and Spindale Mills, Spindale, N. C., to become general overseer of spinning and spooling at Norwood Mfg. Co., Norwood, N. C., succeeding J. M. SHINN, who retired after 30 years of service with this mill.

GEORGE O. MINTZ has become assistant overseer of twisting, spooling, warping, etc., at Sibley Mfg. Co., Augusta, Ga., where C. O. SMITH is overseer. Mr. Mintz had been general overseer of spooling, warping, slashing, etc., at the Loray plant of Manville-Jenckes Corp., Gastonia, N. C., which recently was closed. He had been with that concern for 10 years.

E. ROWELL HOLT, well known in the textile industry, has been appointed representative for U S Bobbin & Shuttle Co., in North Carolina and Virginia, with headquarters at 913 First National Bank Bldg., Charlotte, N. C.

BARNEY R. COLE has joined the sales force of the Atlanta Harness & Reed Mfg. Co., Atlanta, Ga., traveling Georgia and Alabama at the present. Mr. Cole is an experienced textile man, having formerly been associated with the Opp and Micolas Cotton Mills, at Opp, Ala. At a recent meeting of the stockholders of the Atlanta Harness & Reed Mfg. Co., GUY P. CARMICHAEL, who for several years has been secretary and assistant treasurer of the company was placed on the board of directors. A. PIERCE ROBERT was re-elected treasurer and general manager, and also a member of the board. RONALD RANSOM, executive vice-president of the Fulton National Bank; L. W. ROBERT, SR., and L. W. ROBERT, JR., were re-elected as directors, and THOMAS H. DANIEL, general agent for Georgia of the Union Central Life Insurance Company, was placed on the board of directors.

Mr. Cole

L. C. FINDLEY has resigned as overseer of weaving at the Rushton Cotton Mills, Griffin, Ga., to accept a similar position at the Eureka Mills, Chester, S. C.

O. S. SHELTON has resigned as overseer of spinning, spooling and warping at the Flint River Cotton Mills, Albany, Ga., and has entered the textile machinery and supply business at 1113 37th St., Columbus, Ga.

J. H. ASBURY, JR., has been made overseer of dyeing at the Richmond Hosiery Mills, Rossville, Ga. After completing a textile course at Georgia Tech in 1931, Mr. Asbury served for several years as instructor in the textile department there.

JOHN F. MATHESON, who was a member of the class of 1927 at N. C. State College Textile School, and who has been vice president and general manager of the Mooresville Cotton Mills, Mooresville, N. C., was recently made president of that company.

RALPH H. CLORE has been appointed general sales manager of The Medart Company, St. Louis, Missouri, manufacturers of power transmission machinery. Mr. Clore, who was formerly general sales manager of the U. S. Electrical Tool Company, succeeds F. P. KOHLBRY, who has resigned to assume active charge of the Machinery and Welder Corp., of Chicago.

CHARLES J. PREWETT has taken the position as superintendent of a new mill being built and operated by W. R. Grace & Co., in South America. Mr. Prewett completed his course in the textile department at Georgia Tech in 1931 and until recently was connected with Eagle & Phenix Mills, Columbus, Ga. His present address is c/o W. R. Grace & Co., Chiguayante, Concepcion, Chile, S. A.

JOHN M. CURRIE, a member of the class of 1926 of N. C. State College Textile School, has been transferred from superintendent of Entwistle Mfg. Co. No. 2, Rockingham, N. C., to a similar position at Pee Dee Mfg. Co. No. 2, Rockingham, N. C.

L. J. MCGINTY has resigned as overseer of experimental dyeing at North American Rayon Corp., Elizabethton, Tenn., to become associated with his father in business at the Chickasaw Thread Co., Shelby, N. C. He completed his course in textile engineering at Georgia Tech in 1926.

L. D. DELOACH is now overseer of weaving at the Covington Mills, Covington, Ga. Mr. DeLoach completed his textile course at Georgia Tech in 1927 and for several years was with the Manville-Jenckes Corp., High Shoals, N. C.

C. L. JOLLY has become assistant superintendent at the Riverdale Mills, Enoree, S. C. Mr. Jolly had been general superintendent of the Loray plant of Manville-Jenckes Corp., Gastonia, N. C., until it was closed recently. He is a graduate of the textile department at the Georgia School of Technology, Atlanta, Ga.

CHICOPEE MFG. CORP. OF GA.

GAINESVILLE
GEORGIA

MR. N. L. SMITH, PRESIDENT
MR. F. A. COSGROVE, SECRETARY

MR. NEILSON EDWARDS, TREASURER
MR. M. T. GRIMES, AGENT

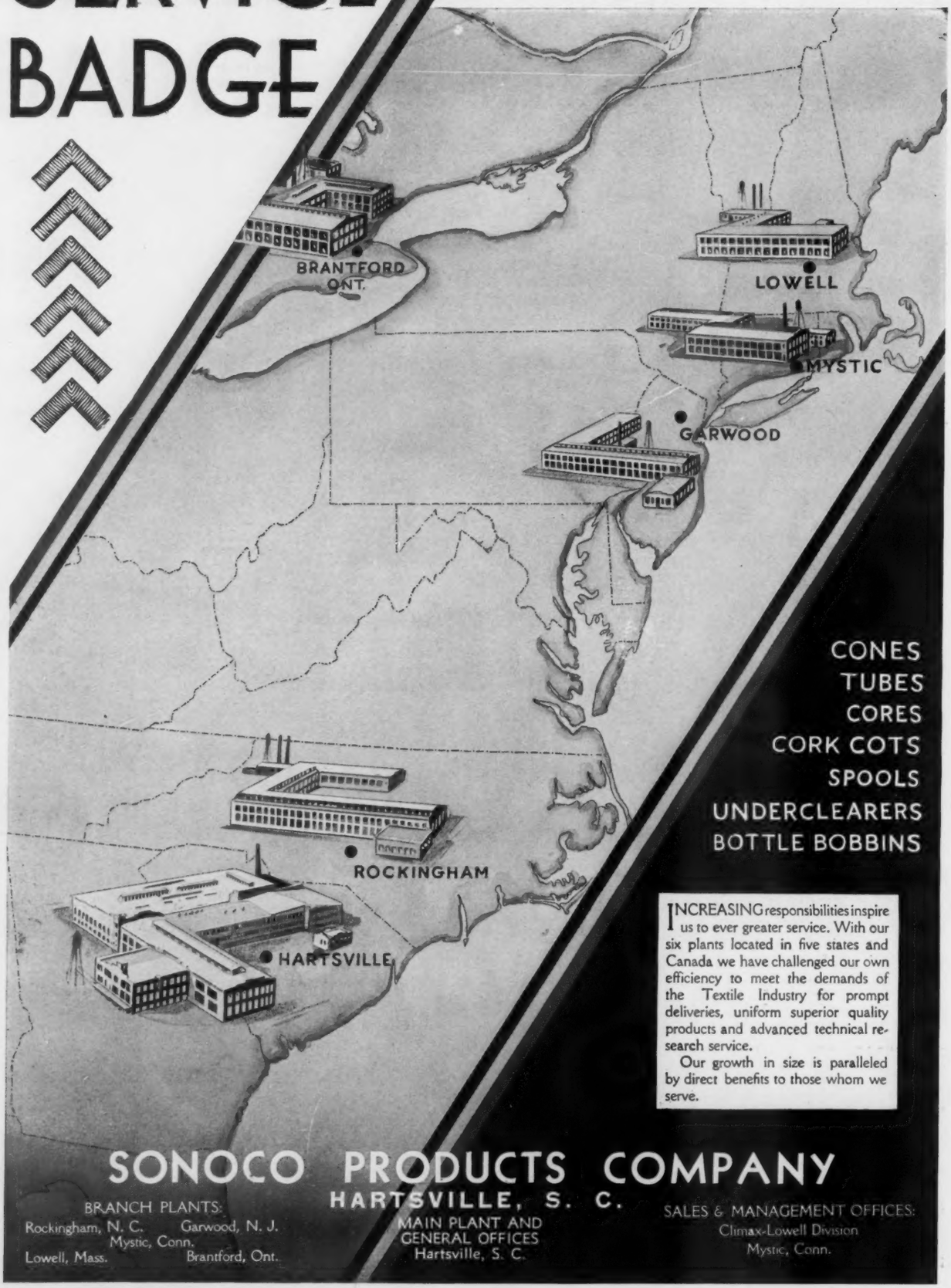
ONE OF THE SOUTH'S MOST UP-TO-DATE, THIS MILL IS COMPLETELY EQUIPPED WITH

BARBER-COLMAN AUTOMATIC SPOOLERS

AND SUPER-SPEED WARPERS

THIS PLANT HAS 59,040 SPINDLES AND 1,431 LOOMS MANUFACTURING GAUZE.

SERVICE BADGE



CONES
TUBES
CORES
CORK COTS
SPOOLS
UNDERCLEARERS
BOTTLE BOBBINS

INCREASING responsibilities inspire us to ever greater service. With our six plants located in five states and Canada we have challenged our own efficiency to meet the demands of the Textile Industry for prompt deliveries, uniform superior quality products and advanced technical research service.

Our growth in size is paralleled by direct benefits to those whom we serve.

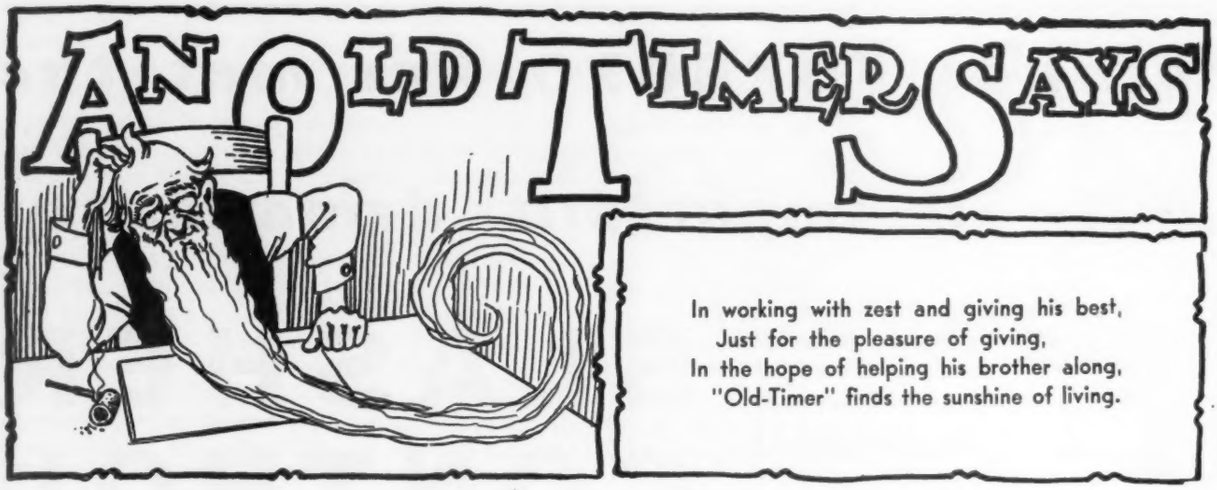
SONOCO PRODUCTS COMPANY

HARTSVILLE, S. C.

BRANCH PLANTS:
Rockingham, N. C. Garwood, N. J.
Mystic, Conn.
Lowell, Mass. Brantford, Ont.

MAIN PLANT AND GENERAL OFFICES
Hartsville, S. C.

SALES & MANAGEMENT OFFICES:
Climax-Lowell Division
Mystic, Conn.


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Yes, Mr. Ford, That's What I've Been Saying

SINCE writing recently the article which appeared on this page in the February issue and pointed out the wonderful opportunities for overseers and superintendents who would prepare themselves for promotion, I have read an interview with Henry Ford which appeared in the November 10, 1934, issue of *Collier's* and which practically substantiates my contention, viz: that executives are looking for men all of the time; more efficient men, more loyal men, and by loyal I do not infer merely men to whom that word applies literally.

Funk and Wagnalls' dictionary defines Loyal as constant and faithful, devotion, etc. But I use the word loyal in the broader sense with reference to a man's work, that is, the type of man that an overseer or superintendent is supposed to be.

Loyalty not only means being loyal in the above described sense, but an overseer's or superintendent's relations to his employer should show trustworthiness. Can your employer trust you? Remember that article with the illustration I made about an old darkey his master could trust?

Loyalty—

It means fairness as your conscience dictates—

It means duty as your conscience dictates—

It means a man of honor as your conscience dictates.

All of these explanations, reasonings, etc., are made simple if a man will conscientiously and honestly keep always before him the OLD-TIMER slogan:

Would I Hire Myself for My Job?

Mr. Ford in his interview intimates that if you could only find *men*, you could do almost anything. I am quite confident if he were asked, what OLD-TIMER claimed in the article referred to—that there are many executives who would gladly pay $10,000 for positions for which they are now paying $5,000 if they could only find the men—yes, I am confident that Mr. Ford would say, "Certainly, I would."

Quoting Mr. Ford's actual words as he talked to the reporter about his different businesses, he said, "That's the hardest thing to find—people to run things."

What he was referring to was man as leaders—men who would handle his money, his machinery, the same as they would if they owned it. Further along in this article he again refers to the lack of men leaders. I quote again: "We're doing it. But it's the hardest job I ever tackled. It takes managing—*that's where we are short.*"

Now, you fellows who read the OLD-TIMER articles and said "Humph! I don't think so much of that. I am not so pepped up about that idea. OLD-TIMER is just preaching or writing to fill space or something."

At any rate, you did not make up your mind to do anything about it, did you? Probably I did not have the appeal, the wording, or you did not have enough confidence in what OLD-TIMER said to stir your determination to start something—something that would make you proud of yourself, and justly so, because so few men have that determination with backbone to carry it through.

Just because I know some of our readers had such thoughts, and took the article so lightly, I could not refrain from coming back at you when I read some things Mr. Ford had to say. You know it is a lot of satisfaction sometime to say "I told you so". Especially when you have such an outstanding personality as Mr. Ford to quote from.

So much for the argument about there being a scarcity of outstanding men—men who can manage—men who will use their employer's money the same as if it belonged to them, etc., etc. Now there is one other very important question we have been harping on through these pages for, lo, these many years.

In fact I almost get ashamed of myself sometimes that we have gone at the subject so many times—in so many different ways—always trying to drive the nail home—always hoping that we will hit just one overseer or superintendent who will feel that we are talking to *him*, will feel that we really have his interest at heart instead of trying to give him a lot of theoretical bunk, that we are not just trying to give

Because FOXBORO has met the 4 all-important demands of

1 *Automatic Control of Temperature on the Size Kettles*

2 *Automatic Control of Level in the Size Box*

3 *Automatic Control of Temperature in the Size Box*

4 *Automatic Control of large and small Drying Cylinders*

SLASHER CONTROL

—it is saving money in many mills

There is, surely, little need to reiterate to experienced Textile Mill Executives the value of automatic control in Slasher Operation.

Not only specific tests, but actual day by day practice in big mills have demonstrated that such control reduces warp breakage up to 50%, as well as increasing production and reducing the consumption of both starch and steam.

The Foxboro System is saving money and getting better results in outstanding mills because it is a system that ***does not leave any weak link*** in the slasher cycle.

The important thing to remember is that for best results ***such control must be complete.*** The Foxboro System controls all four essentials.

The careful engineering in the Foxboro System of Slasher Control is typical of the thoroughness of Foxboro Engineering in the application of Foxboro Instruments to every process of textile production. If you want to cut costs . . . why not get in touch with a Foxboro Engineer?

The FOXBORO COMPANY
FOXBORO, MASS., U. S. A.
Offices in Principal Cities

★

FOXBORO
REG. U. S. PAT. OFF.
THE COMPASS OF INDUSTRY

Complete textile instrumentation

The evidence is yours——if you want it **WRITE US** *for the facts* **TODAY**

advice but we are doing all in our power, based on years of practical experience, close observation and study, to raise the standard of one of the finest bodies of men there is in any industry: the overseers and superintendents of our cotton mills.

This, I will admit, is taking in a large territory, still we challenge any man to disprove that statement.

OLD-TIMER has come in contact with a lot of men, who were foremen, heads of departments, etc., in many industries, but taken as a whole, on an average or in any other way, there is no finer, more honest, and hard working real Anglo-Saxon men than my brother overseers and superintendents.

Still, fellows, we have got a lot ahead of us. We must be up on our toes. We must be constantly on the alert to raise the standard. That is why we are always fussing at you to wake up—not to let the rope slacken for a minute. We have wonderful opportunities facing us every year, every month, every day.

And now, I am going to quote Mr. Ford again. He too says we have opportunities—plenty of them—of course he is not talking about overseers and superintendents in cotton mills, but the same reasoning applies to any industry—

(Interruption: Come in! Oh, hello, Frank! How was the match? A friend of mine, a real-estate man, suggested that we go to the wrestling match tonight, but I had just read this article in *Collier's* I have been telling you about and felt like I had a message for overseers and superintendents that could not wait; no matter how well I enjoy wrestling matches. He just dropped by to tell me all about it, and seeing my manuscript scattered all over the old desk wanted to know what in Heck I was doing and had I been sitting here all this time. It is now most midnight. Well, fellows, read the little verse at the top of the OLD-TIMER page and you will have the answer.)

Now, to get back to what Mr. Ford said about opportunity. Here are his exact words: "Where there was *one* opportunity when I was a young man, there are *thousands* now."

And that's that. Words from a man who certainly should know if any man in the world knows—he was not making up some fine speech or preparing a special article either—it was just a plain ordinary conversation with a reporter, nothing prepared. Mr. Ford made that statement based on years of experience—of successful experience. The average man would say Mr. Ford was lucky, that he just happened to strike everything at the right time and all of that kind of argument you hear about all kinds of business and successful men.

Remember the article which appeared on this page about the talk I had with a graduating class at one of our textile schools? Here is one of the illustrations made in that talk: In trying to find some way to show those boys that wonderful opportunities lay ahead of them as they were about to start out on their own, I said, "Boys, do you see that electric light there on the ceiling? Do you know that it is only about 5 per cent efficient; that for 100 pounds of coal in the coal pile there is only about 5 per cent of that 100 pounds of coal converted into light? What a wonderful opportunity there is for some young electrical engineer to come along and clip off 25 or 50 per cent of that inefficiency—and the man who does will be able to write his check in seven figures.

"We are only scratching the surface, boys, and the same reasoning about the electric light applies to cotton mill machinery."

At that time we had no long draft—we had no high speed spooling and warping nor high speed winding and warping—no high speed looms.

Gosh, fellows, don't you see?

Cotton Mats for Curing Concrete

Experiments conducted during the past year by both the Federal Bureau of Public Roads and the Texas State Highway Department amply demonstrated the practicability as well as the real economy of cotton mats for curing concrete pavements, according to reports received by C. K. Everett, manager of the new uses section of the Cotton-Textile Institute.

In the tests cotton mats made of "osnaburg" weighing from 6.3 to 7 ounces per square yard and with a filling of low-grade cotton, cotton linters, comber noils or card flat strips were used where standard practice has been to cover newly-laid pavement with some other wet fabric for from 10 to 24 hours followed by wet earth or ponded water for another 10 days.

Seven cotton mats of slightly different design and weights were used 47 times on three different projects between December 21, 1933, and November 24, 1934, according to Henry C. Porter, Engineer of Soils and Research for the Texas Highway Department—in each case, the mats remaining at a placement and being kept dripping wet for a minimum of 72 hours. The condition of the mats when the third project was completed justifies an estimate, Mr. Porter declared, that cotton mats will stand at least 50 placements.

"The experiments performed with cotton mats for curing concrete pavement have proved very efficient," said Mr. Porter in a recent letter to Mr. Everett.

"The cotton mats kept dripping wet for 72 hours and then removed have made as high or higher compressive strength concrete.

"The cotton mat method has cost no more per square yard of pavement cured, figuring the mats stand 50 placements, which they have done.

"The curing is more uniform, as a film of water is held over the entire length and width of the pavement, which can easily be inspected. (It is difficult if not impractical to determine whether or not the earth covering is uniformly wet next to the concrete.)

"Where wet burlap is replaced by a covering of earth there is a period between the times the burlap is removed and the earth is applied, at the time the pavement needs protecting the most. Also the earth is often more or less dry when it is placed on the pavement and probably robs the concrete of moisture where it is not wetted at the instant it is placed.

"Where the subgrade and shoulders of the roadway are constructed of selected soil, it is not disturbed or contaminated during pavement construction when cotton mats are used.

"Where the concrete is a base for covering with bituminous topping, the scarified surface of the base is perfectly clean when the topping or wearing surface is applied to it and a better bond is obtained between the two."

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HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

Preventing "Ropy Filling" on Wide Sheeting

Also wants to know your opinion on best way to clean loom; and also whether pick-out hands are advisable on wide sheeting looms . . . . . .

EDITOR COTTON:

Every now and then we are considerably troubled with "ropy filling" which sloughs off of the quill, causing double and sometimes triple threads to run into the same shed. Will you please tell us what causes this and what we can do to overcome this defect? It is particularly bad when the filling goes into wide sheeting to be made into bed sheets.

We get quite a large number of "bad places" in our cloth and contribute this mostly to blowing off of the looms. However, this has to be done to keep too much lint from getting into the drop wires and harnesses. What can you suggest?

Do you think it pays to have pick-out hands for wide sheeting looms? About how many looms could a pick-out hand attend under normal conditions?

CONTRIBUTOR NO. 6359.

Repeats Approval of Flat Grinding Machine

EDITOR COTTON:

In the December issue of COTTON, in the article from "H. M. (GA.)" on page 105, another compliment has come my way, and I could not have wished it from a better source—the gentleman being a "drummer" in daily contact with mill men. He states, "Carding is the backbone of cotton manufacturing, and the valuable information on this subjejct imparted by the ever generous 'WASH' and others is helpful."

"The ever generous 'WASH'!" The southern gentleman who penned that compliment is far more generous than "WASH", and I assure him that those words from him proved a mighty good incentive with which to begin the New Year.

Thank you, sir!

Now, let us turn back to the May 1934 issue of COTTON, page 109, where we find that "T. A. B. (MASS.)" states, "Before closing, I might say that I think 'WASH' ought to give the boys a little explanation as regards why close settings of the flats will make the yarn weaker."

Next, consider what "H. M." states in the third paragraph of his December article, "All cotton mills should have at least one automatic flat grinding machine, which, as I have endeavored to point out many times to mill men, would be an investment paying good dividends in quality carding."

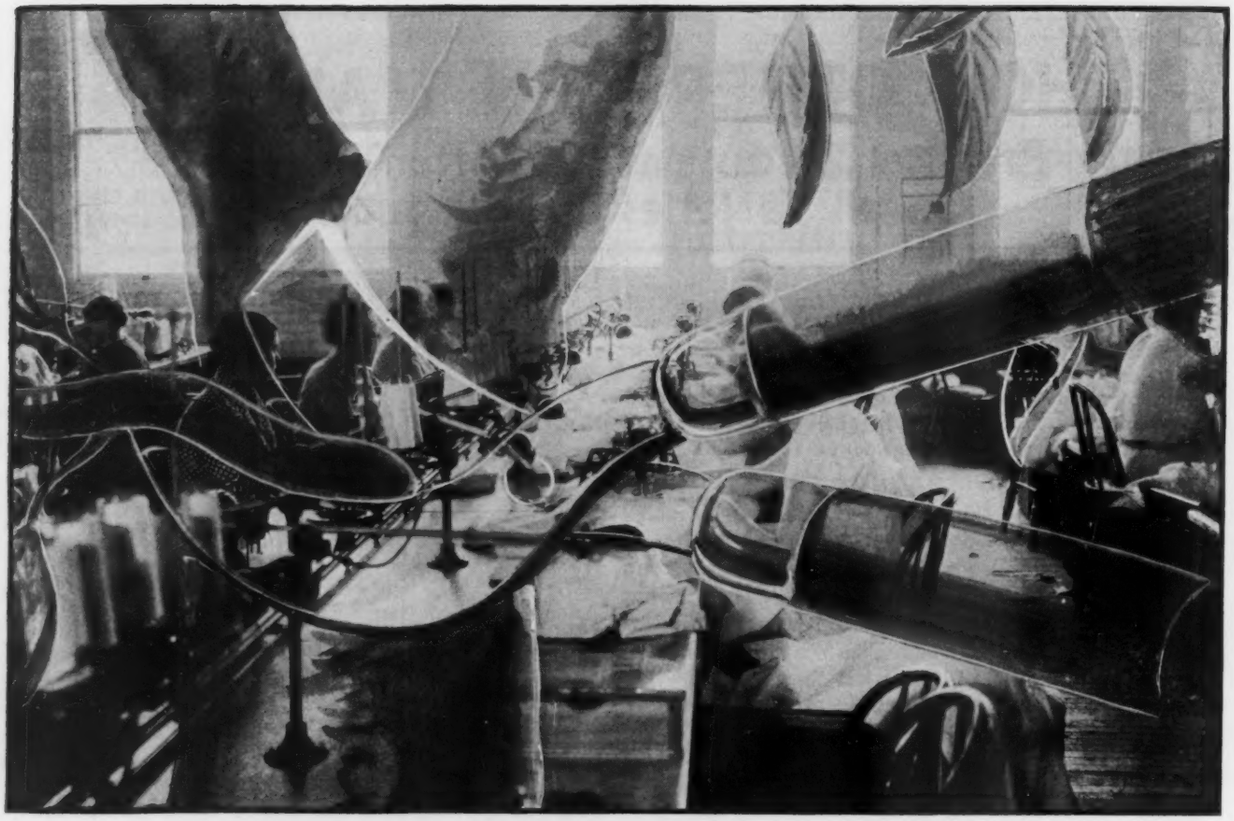
On page 75 of "Carding Grinding in Theory and Practice", published by Dronsfield Brothers, Ltd., textile machinery specialists, Oldham, England, it is stated that, "According to the statement of a leading expert, the presence of high and low flats on the card is conducive to the loss of certainly one-third and probably one-half of the theoretical carding capacity." It is my intention here to prove that both Dronsfield and "H. M. (GA.)" are dead right.

But, before doing so, I would like to have the reader consider the diameter of the cotton fiber, which is .0004 to .0008-inch. Having the diameter of the cotton filament in mind, the reader will realize that it requires a very small amount of space to reduce the carding capacity of the card. Again, it must be borne in mind that the time taken by the stock from the feed plate to the coiler is from 16 to 19 seconds. So it can be seen that the flats must be sharp and set properly to get 100 per cent carding.

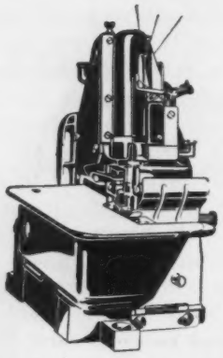
No mill man can deny that every practical man believes that every flat should do the same amount of work, because every flat is of equal importance in insuring efficient carding, and the only way in which this can be accomplished is to have all seatings perfect so that all flats which are brought into position on the flexible bends will have the same space between them and the cylinder.

Can any practical man deny that carders and grinders have all high flats marked? Of course, there is no other way to set a card. You must set by the high flats. So, as far as the other flats are concerned, you are in the dark. What a picture!

When you set an old card as close as possible, it will not make the yarn any weaker for the reason that you have only about ⅓ of the flats working. The only way to prove that the closer the setting the weaker the yarn is to have every flat occupy the same seating on the rigid bend, and then set to a 5/1000-gauge, then break the yarn; next set to 10/1000-gauge and break the yarn, and you will find that the 10/1000 setting will make the strongest yarn,



Will "PRUNING" put your Sewing Room on a more profitable basis?



Daily savings of $1.46 or $408.00 per year per machine were shown by 16 of these "THIRTY-NINE-ONE" overseamers which replaced 21 old machines in a mill specializing on flat knit rayon undergarments. Original investment was repaid by savings in this case in 6.3 months.

REGULAR, frequent prunings remove ineffectual energy-sapping growth and keep a fruit tree at its peak of productivity.

Just so, your sewing room should be put through a similar "pruning" process, eliminating obsolete, low production equipment that restricts its profit making possibilities.

Lazy loafing machines, incapable of profitable operation at present day standards of performance, cannot be discovered by visual inspection alone. A careful comparison of individual production and maintenance costs is needed to expose the weaknesses of your sewing room.

Such a study is easily made with the help of our Form 374 to be had for the asking. Send for it—make an analysis of your sewing room performance. Then, if you wish, we can demonstrate how replacements of Union Special Machines will bring your plant to a peak of profitable operation.

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although the 5/1000 setting will produce the cleanest yarn, but the weakest.

So it should be seen that the Dronsfield people are dead right, for I have proven that in most mills all high flats are marked, which is of course a confession that high and low flats exist—and the only remedy is the automatic flat grinding machine.

"H. M." claims that the use of an automatic grinding machine will pay good dividends in quality carding. What about the increased amount of strips that low flats will cause?

WASH (R. I.)

Maintaining Cloth Widths

EDITOR COTTON:

To the casual observer, obtaining the correct cloth width is only a matter of applying the correct reed. To anyone closely connected with weaving cloth it is a great problem. For although the proper reed is essential, there are many factors to consider before a reed is chosen. And even after choosing the reed we run into difficulties, for though we may get the proper width on one loom, the next loom will give a difference. Not only do variations occur from loom to loom, but from day to day or during different times of the day, and even repeat orders sometimes find a difference from previous ones. It is well to say now that fabrics made from rayon are more susceptible to these variations than are cotton fabrics.

Some mills pay little attention to these variations, perhaps not even noticing that they are there; yet on the other hand, the more exacting mills are checking them continually.

What is the cause of these fluctuations? Why are they so much more prominent in fabrics made from rayon than in those made from cotton? How can these widths be kept more constant? These and other questions are asked and answered by many individuals in many ways, yet as the weaving goes on, the same variations occur time and time again.

In laying out any fabric, we must decide upon a reed to use. This reed should be the same on all looms (of similar make) running a particular style. In order to decide upon a reed to use we must take into consideration a number of things. Of course the question is, how much does this cloth come in? By this is meant the amount which has to be allowed for reed width. Not all fabrics contract alike. Some require a smaller allowance, while others require much more. In allowing for reed width, there is no definite rule to follow. One must have a keen sense of knowing how any particular fabric will react, taking the sley and pick, warp and filling, weave, and kind of loom used into consideration.

Lower sley goods will require more reed allowance than higher sley goods; while lower pick goods will require less allowance than higher pick goods. Thus a low sley and a high pick cloth will need much more reed width than a high sley and a low pick. We then may conclude that it is entirely probable if for some reason we must increase the pick of a cloth, we will find a difference in the width of this cloth (narrower) and if the increase is great enough we may even have to change the reed in order to keep the standard width.

Knowing the yarns is essential. Finer yarns in the warp will be held out more readily by the filling, thus a fine warp and a coarse filling will not contract as much as a coarse warp and a fine filling. Cotton yarns require much more allowance than rayon. Acetate filling needs more than rayon. Hard twisted filling yarns will not contract as much as lower twisted filling yarns, while a harder twisted warp yarn will require more width in the reed than ordinary twisted warp yarn. The number of filaments in a rayon filling has a decided influence. The smaller the number of filaments the less contraction we have, and so multi-filament rayons always require more allowance in the reed than standard filament rayon.

The weave, naturally, is one of the most important factors in allowing for reed width. The looser the weave the greater the contraction. Thus a plain weave (one up and one down) holds out much more than any other weave, and as the amount of float in the weave is increased the reed width must also be increased. We must also take into consideration the effect desired. Some fabrics require more warp tension than others, while some require different loom settings, and each of these has a decided bearing on the width of the cloth.

It is also very important to know the kind of loom on which the cloth is to be woven, chiefly because of the position of the sand roll and the cloth roll on the different types. If the sand roll is directly underneath the breast beam the cloth will be held more rigidly and will not allow such a contraction as when the sand roll is lower. The amount of surface contact of the cloth with the sand roll works in the same way. More surface contact holding the cloth out better than less contact.

Ordinarily in any mill, the procedure that is followed in checking whether or not a fabric is being made correctly is somewhat as follows: The warp is rushed into the loom, tied, drawn and started. Hardly a yard of the cloth is woven when it is taken off and checked. The width is also observed at this time. Conclusions are drawn then and there. Yet it can be truthfully said that this first yard is hardly a fair specimen of the subsequent yards, and as the cloth room receives cut after cut of this style it is then noticed that the cloth is off width. Too narrow or too wide, is the cry, yet why shouldn't it be? The cloth was hardly around the sand roll when it was taken off for checking. Now, frankly speaking, did that loom have a chance to weave the cloth as it should? Did the warp carry the correct tension? Was the timing of the loom correct? Did that sand roll grip the cloth as it should?

Generally speaking, No is the answer to all of these questions. Well, then, why not allow the loom

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Ordinary pearl starch which can be furnished by any of the CORN STARCH MANUFACTURERS in AMERICA, produces most excellent warp sizing and cloth finishing results, when liquefied with ARCY, to produce a thin sizing solution with marked penetrating and binding properties. The soluble starch thus produced, is more transparent and does not "cloud" the colors, especially noticed in denims and chambrays. Frosted splotches are prevented, and all colors show up brighter, than when the dyed threads are coated with a less thansparent film.

Reasons given by most mills for using ARCY liquefied pearl starch usually are not so much because of the dollar or two saving in the cost per kettle of size, but the better results they find in weaving the warps, and the feel of the finished goods, which is so pleasing to the buyers of the goods. Also, the more soluble nature of the starch assists the finisher to get superior finishes at the bleach works.

Arcy liquefaction gives to corn starch size the slow congealing properties of potato starch size, which corn starch size does not possess naturally. Slow congealing size remains fluid for longer time at temperatures below boiling, and its fluid state during the time the wet warp is passing from the squeeze rolls to the drying drums, allows the size to FLOW into the crevices between the cotton fibres, and probably is responsible for the smooth feel imparted to the sized thread.

ARCY is the only enzyme product which has stood the test of time (over 8 years) for successfully liquefying ordinary pearl starch in the cooking kettles. No acids, chlorine, or other similar oxidizing chemicals are present. No extra equipment required, and its use is simple and practically fool-proof.

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to do a real job? Why not have the cloth going on the roll as it should? Let a few yards be wound around the cloth roll, set the loom for the best conditions of the fabric in question, and then cut the trial yardage off. This may seem to be an apparent waste of cloth, but isn't this better than changing the reed? It is not hard to see which is the more economical.

Now, we are started in the right direction. Having decided upon the proper reed and being sure it should give us what we are after, we may sit down and say that our cloth should be up to standard as far as width is concerned, provided of course that all conditions are the same as on the loom we began and at that time. But conditions are not the same, hence the variation. If the cloth room keeps an accurate check on the width of cloth coming in, it will without a doubt find pieces from the various looms which are not like others, some being narrower, some wider. The only question entering our minds, however, is how much narrower or wider are these pieces coming? Why aren't they like the rest, or like the pieces from the loom, that was checked originally?

To go into the matter still further, let us take one piece of a particular style and check the width throughout the piece. If it is a cotton cloth the chances are good that the width is constant, but if the fabric is a rayon construction, we will in all probability find the width varying throughout the piece to a marked degree. Going still further, if we check one run of a certain style against a previous or perhaps a later run of this same style, we again may see a difference. Why? Let us try to enumerate the causes of these variations.

To begin with, all looms should be reasonably expected to give the same results, providing of course that they are set the same. In most cases, however, they are not set alike. If one loom carries an early setting of the harness, it will weave a narrower cloth than a loom on which the harness close later or nearer the fell of the cloth. If the cloth does not travel around the cloth bars, gripping the sand roll the same on all looms, a difference in cloth width will be obtained.

How about warp tension? Without a doubt, most everyone in the weave room knows that the tighter the warp, the narrower the goods, hence the importance of carrying uniform tension on warps is clearly seen. The difference in width from an extremely loose warp to an extremely tight warp is very great, especially on rayon goods. Not only warp tension, but also filling tension in the shuttle should be watched as these will have an effect on the cloth width.

Many men overlook one important item—humidity. How much moisture is carried in the room at all times? Is this humidity constant hour after hour, day after day? Is the room humidified uniformly? This being a rather hard thing to control it is easily seen that in some places we may have less moisture than in other places. Looms situated in a dry spot will weave narrower goods than those where there is a greater amount of moisture, especially on rayon, for this yarn is much more susceptible to the changing and varying conditions. The yarn being more readily stretched when wet than when dry. Thus a rainy day may cause our cloth to come wider while dry weather keeps our cloth on the narrower side. This can be easily proven on rayon fabric. If we compare a winter run against a summer run we will find without a doubt a tendency toward narrower goods in the winter, when the weather is frosty and dry.

As the weaving of a piece of cloth is a matter of a few days, it is then very probable that the atmospheric conditions during the period vary, and the cloth will vary accordingly.

Perhaps very few men ever think much about slasher size as something to bother with so far as cloth width is concerned, but this is a very important item. Generally speaking, the softer the size the greater the width. Thus, if we decide to change our sizing formula we must expect a change in our cloth width. If we put more body to the size our cloth will be narrower. On the other hand, more softener will cause more pliable yarn and a wider cloth. This therefore must be considered when making old styles, for if we decide to change our size formula we must also bear in mind the probability of a difference in width.

Fabrics made from cotton are not so likely to be affected as rayon fabric. This of course is due to the nature of the yarn.

Checking up on these conditions, I find, will enable us to control our standard widths of cloths much better. These may not be all of the causes, but they are the chief causes and certainly should be watched.

P. R. K. (MASS.)

"A Weaver in Either Alley is Better Than One in the Window!"

Another new contributor prefers having the weavers patrol the front alleys—but adds the above wise remark . . . . . .

EDITOR COTTON:

I enjoy reading COTTON very much, and "HOW OTHER MEN MANAGE" and "OLD-TIMER" come first every time.

I have been particularly interested in the discussions which you have been publishing during the past year or so with reference to weavers in the back alleys —that is, whether the weavers should spend much of their time in the back alleys.

As one who has comparatively recently graduated from an intensive study of this, I desire to say that my experience has taught me that when it comes to a choice as to which alley a weaver should spend his time in, he should choose the front alley. That is where he detects thin places, bad places, oily filling, kinky filling, skips and many other defects which pass out of sight in a very short time after appearing in the cloth.

If the weaver is on his toes and notices the fell of the cloth, he can detect mat-ups behind the harness

1859—76 YEARS OF SEWING PROGRESS—1935

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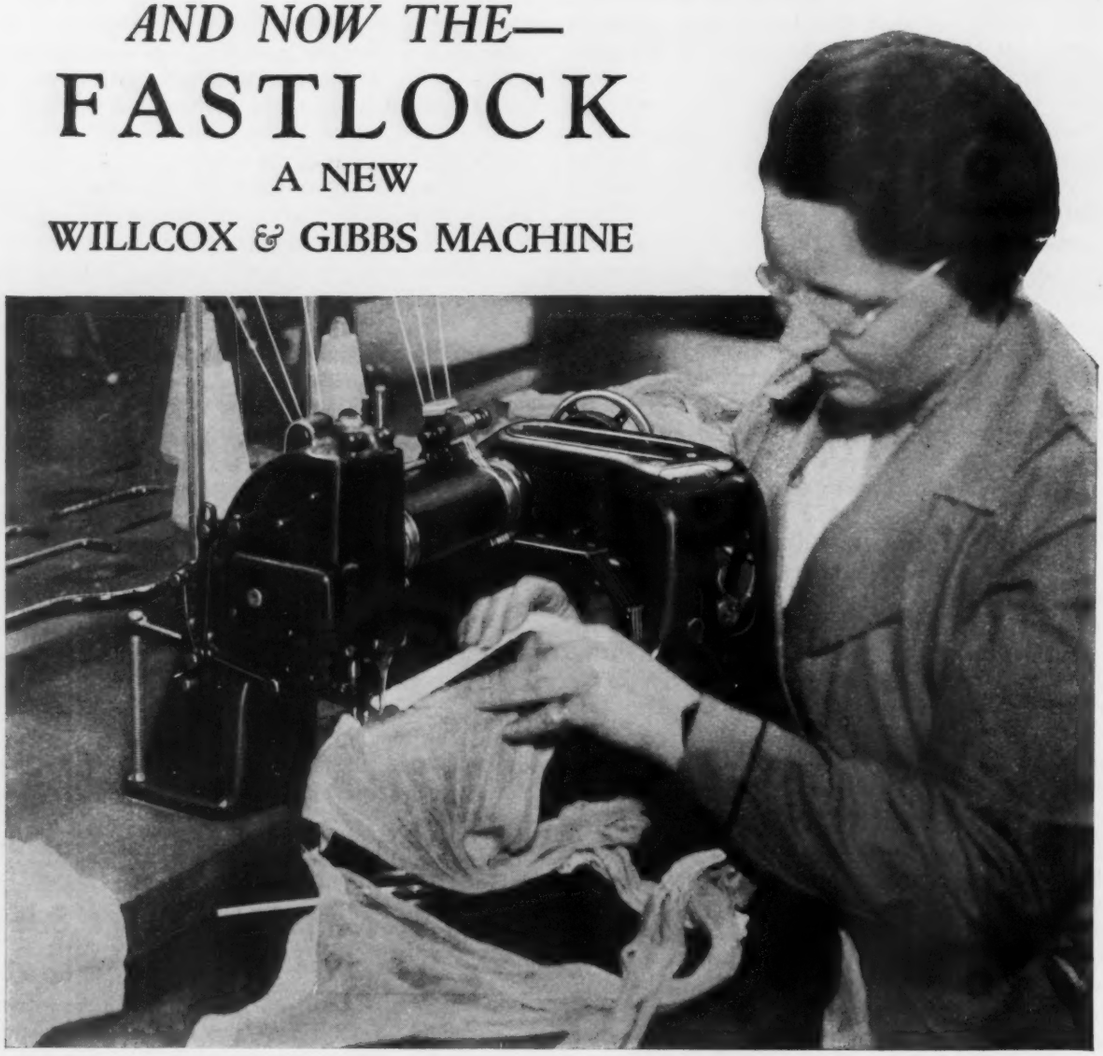

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and also get a pretty good view of the gouts and wild yarn coming up behind.

The surest remedy for gouts and wild yarn is the elimination thereof before the warp reaches the loom. A glance at the yarn on the warpers (we have old style equipment) or slashers will show whether it contains these defects. In fact, the presence of them in the warp is proof positive that they happened somewhere along the line.

A weaver in either alley is worth more than a weaver in the window or the door-way.

F. R. (S. C.)

Answers Fly Frame Questions Asked "S. I. C." by "Wash"

If all this fly frame discussion is confusing, bear in mind this man is referring only to the questions on page 97 of the June issue . . . . . .

EDITOR COTTON:

On page 97 of the June issue of COTTON, "WASH" asked "S. I. C." some questions with reference to a fly frame, in connection with the discussion they had been having. The items which "WASH" submits for study are as follows:

1. The surface speed on the bobbin must equal the surface speed of the front roll.
2. When you increase the speed of the front roll you increase the surface speed of the bobbin.
3. The flyer and bobbin revolve together in order to insert the twist.
4. If we could draw the roving through the flyer without twist we would not want or need the constant speed.
5. Therefore, when you speed up the top cone you speed up both the surface speed of the front roll and the bobbin.

(Editor's Note.—"S. I. C.'s" own reply to these questions from "WASH" appeared on page 89 of the November 1934 issue of COTTON.)

Now, I know all of what I have quoted above from "WASH" is correct. But here is what I want to find out, and I will admit that I do not know the results for I have never tried making the change to see for myself:

If at doffing time, when the frame has been doffed and the ends are wrapped, we go behind the frame and remove the intermediate gear out of mesh with the twist gear and start the frame, we do nothing more than twist the roving, as the compound is so made that the flyer and bobbin both revolve at the same speed for the bell gear is stopped as it receives its motion through the top cone by means of the cone belt to the bottom cone and the train of gears to it and the gear on the compound driving the intermediate gear to the horse-head or bobbin shafts run the bobbins at a speed where no winding is done. Will the change on the jack shaft from a 45-tooth gear to a 48-tooth gear driving the spindle faster destroy this equalization and tend to unwrap the ends?

Understand, I do not know the answer to this one, but it seems to me that the size of the gear on the compound that drives the bobbin shaft would have to be increased in proportion to this gear, or else the speed of it, and we know that the bottom cone gear is the change for the speed here when making a change. Of course I know that changing the bottom cone gear does not affect this speed until the twist gear is placed back in mesh with the intermediate gear. Am I right or wrong? I am not throwing this at anyone. I simply wish to know if I have the right theory. Because when we speed the frame by changing the pulley, we automatically speed up the spindles and the jack shaft in the same proportion, also every other part of the frame, and speeding up the spindles in the other manner, even though we change the twist gear or the top cone which I know changes the speed of the front roll delivery and also speeds the bobbin in proportion to this delivery, there is still in my estimation a difference in the ratio between the two, as the jack shaft is making the same speed as formerly in this instance, and you know one of the gears in the compound is keyed and set-screwed to this shaft and its speed has not been changed and therefore the speed of the compound gear that drives the bobbin shaft is now out of proportion.

I also wish "E. D. (R. I.)" would give us the method he uses to figure out the different diameters on which the cone belt should be as stated in his problem on page 107 of the April 1934 issue of COTTON. I think he would be doing all of us a favor if he would give us this information.

A. S. (ALA.)

Remedies of Rippled or Puckered Selvages in Weaving

EDITOR COTTON:

The probable causes of rippled or puckered selvages on a 3-harness drill weave, with 12s warp and 18s filling, were requested by "CONTRIBUTOR NO. 6313" on page 89 of the May issue of COTTON. You published some answers on page 75 of the September issue, and another on page 101 of the October issue,—and I would like to add my own comments on the problem.

Your inquirer does not give much information as to the construction of the fabrics he is having trouble with, but I will try to help him, although this could have been done better if he had stated the sley, pick and weight of the fabric. The trouble he has with slack selvages on a three-harness drill is caused by the temple. Obviously he is using temples with roll-burrs and these very frequently cause defects of the nature stated on certain types of fabrics.

It is indeed doubtful if this defect can be entirely overcome with this kind of temple. However, the trouble can be reduced in prominence by a proper setting of the temple. The temples should be so set that they are parallel with the reed under tension from the cloth. This means that their points will have to be set somewhat nearer the reed than their bases, when there is no tension on them from the cloth. In applying the tension on the cloth this will create a pull on the temples, bringing them parallel with the reed. The roll-burrs in the temples must

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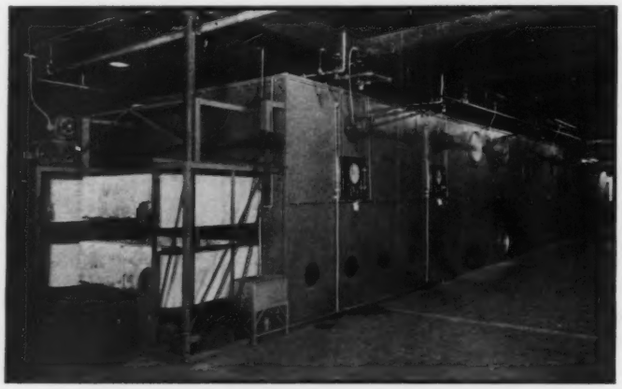

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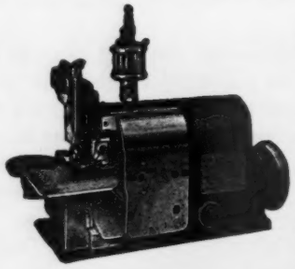

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move very freely, but if the roll-burrs are old they are frequently worn so they form a concave end, instead of a slightly convex end; this is shown in Fig. 1 herewith. The worn end can be made slightly convex, as in Fig. 2, by bringing it into contact with a fine grinding wheel and grinding it slightly convex as shown. If the roll-burrs are permitted to run with concave end against the casing, they will have a tendency to dig into the casing under tension from

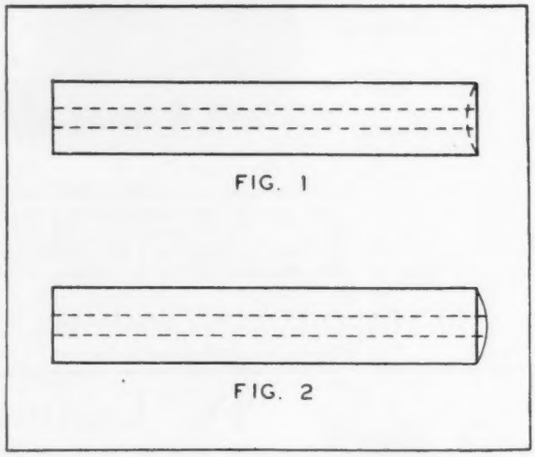

FIG. 1

FIG. 2

the cloth and thus will move resistantly. The cloth, which has to move the roll-burrs, is subjected to a greater strain and will be stretched at the selvages, making these longer than the rest of the cloth.

It is also essential that the temples are set as low as possible to the race plate, without striking it. There must not be any drop of the cloth from the temples toward the center when the cloth is at its lowest position. If necessary, the take-up roll must be raised to bring the fell of the cloth to a higher position to eliminate any drop of the cloth. To maintain the correct warp line, after raising the take-up

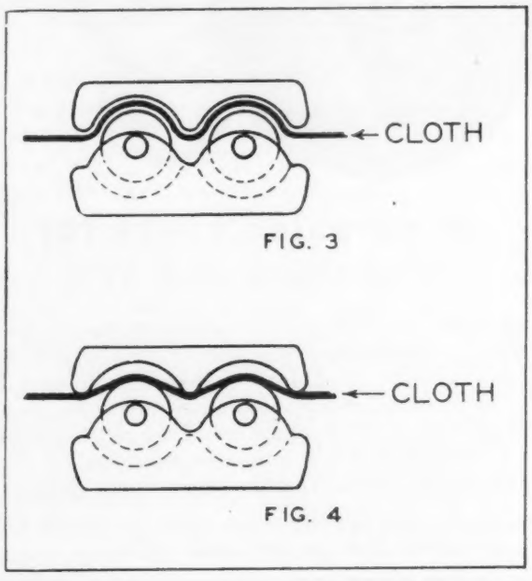

FIG. 3

FIG. 4

roll, it may be necessary to lower the harnesses, warp stop motion and whip roll. Sometimes, temples on pivot which permits the temples to rise and fall with the cloth must be resorted to, in order to avoid a drop of the cloth from the temples. Both a drop and a rise of the cloth from the temples will stretch the cloth at the selvages so they will not lie flat as the rest of the fabric, but in waves.

Another thing that sometimes will have to be resorted to is to raise the roll cover so it will not depress the cloth so deeply between the rolls (see Fig. 3) but will permit the cloth to go through the temples with less surface contact (see Fig. 4). The depression edges of the temple cover can also be ground off, but this will spoil the covers for other fabrics.

To completely eliminate long selvages of the nature described by "CONTRIBUTOR No. 6313", it may be necessary to use selvage temples. If the sley is high enough so there is little contraction of the cloth, the temples may be dispensed with altogether. If the looms are automatic, we need the temple cutter, so we simply remove the roll-burrs from the casing and let the cloth pass through the temples freely. This will make the cloth somewhat narrower, but a coarser reed will offset this effect. Of course, if the contraction of the cloth is heavy we must use temples, and in that case selvage temples are the best. In using selvage temples, the cloth must be woven tightly so there will be no beating back of the cloth, for in this case the temples will lose their grip on the cloth, permitting this to jump out of the temples.

With the meager information of the cloth construction in question, this is the best I can do to help "CONTRIBUTOR No. 6313" and I trust he will benefit from it. If there is something not fully understood I shall be glad to further explain the points. It would be very interesting to know if I have been of any help to "CONTRIBUTOR No. 6313".

CONTRIBUTOR No. 6351.

"Wash" Comes Back at "No. 6123"

EDITOR COTTON:

In the May 1934 issue of COTTON I see where "CONTRIBUTOR No. 6123" gives us a set-up to make a 30s warp yarn break 60 pounds. I, for one, am thankful to the editor of COTTON for inviting the readers to ask for further dope on the subject. However, before asking this contributor for further information on his article, as a favor to me, I would like to have the reader look up the December 1933 issue of COTTON; here he will find where "CONTRIBUTOR No. 6123" states, in his first paragraph: "I do not want to become a nuisance to the 'HOW OTHER MEN MANAGE' department, but this scrap that 'WASH' has gotten himself into is just too good to keep out of."

"CONTRIBUTOR No. 6123" had no idea when he wrote those lines that it is easy enough to start something but not always so easy to stop it when you have had enough. Quarrels are started through misunderstandings, but friendships are founded on understanding. This contributor states, in the seventh paragraph of this same article, "If 'WASH' is right in answering his fourth question, then Houdini was a piker, and 'WASH' should be reaping a golden harvest."

Now look up the article that appeared in the September 1933 issue and turn to page 67. Here you will

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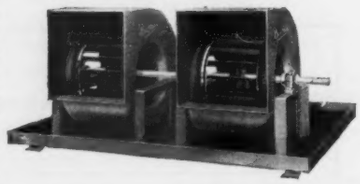

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find a perfect explanation of the English builder, written by "T. R. (N. C.)," a very able writer and one of the best in this department. Next look up your December 1933 issue and turn to page 77 and again you will find another perfect explanation by "K. Y. (MASS.)".

Leaving my own explanation out of the picture, both of these men prove that "CONTRIBUTOR NO. 6123" does not understand a fly frame, because when you do not understand the functions of the builder you do not understand the principle of a fly frame.

Next, he states in the same December article: "Tell 'A. T. G.' that I think 'WASH' is too 'easy', and not to suggest 'WASH'S' being made the czar of textiles any more. We have enough trouble in the textile business without having to listen to a lot of fantastical bunko." Let me say here that any man will have trouble if he follows his advice.

Well, "WASH" may be too "easy", but he is going to make "CONTRIBUTOR NO. 6123" uneasy, answering this article. Allow me to say, also, that "CONTRIBUTOR NO. 6123" got by easily with his previous long articles which I classed as fantastical bunko and which have the ear marks of pamphlets from textile schools. Of all the fantastical bunko articles he has written the one in question is the worst, and I am going to prove it.

Now imagine a man who has been proven to be ignorant concerning the functions of builders on fly frames giving us instructions as to how to run a card room. In the first paragraph of his article he states that he gives us a set-up to make 30s warp yarn break at 60 pounds from a 70-grain sliver with a doffer speed of 8 to 9.5 turns. Look up your November 1933, page 36, and April 1934, page 89, issues of COTTON and you will find where Mr. John W. Long and Mr. Williams prefer a light sliver and fast doffer. I want to repeat here that I know of these men and they are experts. Next, the Saco-Lowell catalog states: "The maximum weight of sliver from the card, consistent with good quality of work on medium and low numbers, is 60-grains per yard. For many special classes of work this is too heavy. One rule, however, holds good for all classes of work, which is: the more rapidly the work can be got from the card, consistent with quality or grade of work required, the stronger will be the yarn". I am in tune with the Saco-Lowell Shops, Mr. Long and Mr. Williams. What say you, "CONTRIBUTOR NO. 6123"?

What this contributor states in the other paragraphs of his article is not of interest to me, for I fail to find anything original.

As I understand it, our friend is running Strict Low Middling cotton 1-inch to 1 1/32-inch staple. He gives a setting of 17-22/1000 stripping plate to the cylinder. Now what I wish to know is why he has a different setting of 5/1000 for the same length and kind of stock. I should like to have him tell us how he determines the setting; what I mean is, what method he has for setting this plate so as to extract only the proper amount of strips. Here is a man who gives us what he terms a wonderful set-up, still, he forgets to give us the diameter and speed of the feed rolls on the pickers, which is one of the most important factors for the production of a good sheet of lap. I should also like to have him give us the diameter and speed of the feed rolls in his picker system; what type of rolls run on the drawings; the draft on each head of drawing and also the draft of the slubber. Also, the draft of all speeders, the ring spinning draft and the speed of all front rolls.

On a Saco-Lowell drawing frame I am running my front roll 380 r.p.m. I am running leather rolls, but sometimes they jump and break the web. What is the cure? When the twin gears are set too deep to the twin gear pinion, what is likely to happen? Now please do not class my questions as trick questions. I never ask a trick question. I answer all questions pertaining to my articles and I expect "CONTRIBUTOR NO. 6123" to do likewise.

Now, in conclusion, may I ask how this contributor judges the tension on his fly frames? He has confessed that he does not understand the builder, and he knows the wrong tension on fly frames will make a great deal of difference in the breaking strength of the roving or yarn.

WASH (R. I.)

Some Kinks on Combers

EDITOR COTTON:

I will give here a few "kinks" or "wrinkles" or whatever they may be called with reference to combers which will save expense for a plant with combers and also save the comber man a lot of worry and work.

Let us first take up the comber circular brushes and say that a new set has been put into a comber and that the machine has been running for a period of two or three months and the half lap is in bad condition through having the needles broken, bent or hooked, and in many cases pulled clean out from the brass strips or matrices. Naturally the fibers of that brush get broken in places where the needles are damaged and the brush must have an uneven surface. The man on the job finds the bad half lap and replaces it with a new half lap. Now, that brush does not have the same cleaning power in places where the fibers are damaged, so after the comber has been running for five or ten minutes, the comber man watches the head after a half lap has been replaced and that same head runs O. K., owing to its having a pretty good set of brushes in the comber, for the comber man has a good memory as to which combers he has put new sets of comber brushes in. Some comber men will leave the machine, thinking it is O. K., which it is at that particular time, and yet if that half lap was very bad and the bristles of the comber brushes were badly broken or uneven, he will find that after a period of about two more months, that the noils or waste from that head are neppy and showing what I call chop suey. It will show more on an aspirator back comber than on a doffer back comber (and there are very few doffer back combers today compared with years ago).

Walking behind that comber it will be noticed that the bad waste is coming out of the back, and we begin to wonder how that happens that one head is

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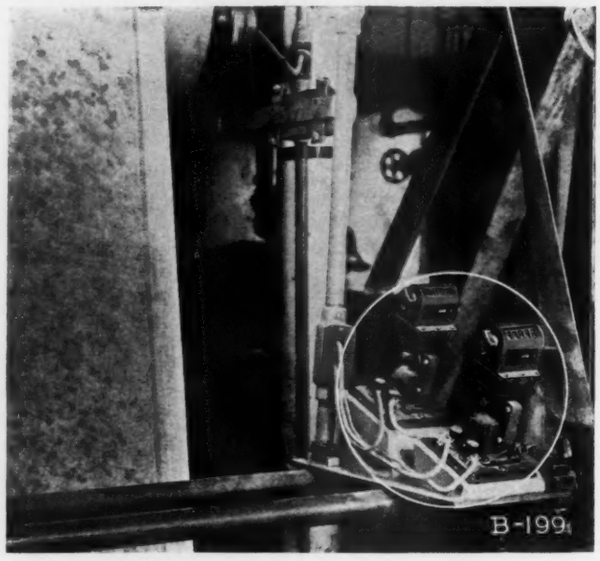

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turning out bad waste when there should be a good set of brushes in the comber. So, when the comber is stopped or running, it will be found that where the bristles are broken or most uneven, the waste is carried around the brush, and with the brushes running that way two or three months the fibers become what we term hooked through running in the same direction and being set deep enough to just touch the brass matrice.

Now, going back to the doffer-back equipped comber, I said that the waste would not be as bad, but it will be bad enough, because do not forget that the wired covered doffer or with the doffer covered with licker-in fillet, is set to a certain distance from the comber brush, so if that brush is broken, (that is, the fibers or bristles) naturally the amount of length of bristles broken from that brush is increasing the distance (setting) between the doffer and comber brush, so instead of either the aspirator back comber with the strength of the air from the fan drawing the waste on to the aspirator, the waste is carried around the brush due to the bristles being shorter in some places and hooked, and the speed of the brush shaft causes the waste to be pushed, practically speaking, further into the brush, which results in the neppiness of the waste. On the other hand, with the doffer equipped back, regardless of the style of wire on the doffer, we have the same trouble, maybe not as bad, but bad enough.

One wrinkle to try before setting the brushes higher, whether it be a doffer or aspirator equipped comber, is to stop the comber where you can see the half lap, and get a handful of dry whiting (loose and not cakey) and drop or sprinkle it over the half lap—see that there is no cotton running through that head—and run the comber for two or three minutes and then speed the lap through and watch the results for about five minutes. If that does not stop the nepping then raise the brushes up sufficiently to stop the nepping.

Another trick is to speed up the brush gear. I did not suggest this first for the reason that speeding up the brush shaft is best when the brushes are small.

Although I do not wish to dwell too long on the comber brush, I cannot help passing a remark about when some men take an old set of brushes out and notice that one or two brushes are a shade smaller than the others and contain more neppy waste in the base of the bristles, yet they can swear that the set of new brushes they put into that particular comber were about the same size in diameter—They forget that those heads of the comber where those small brushes came from had bad half laps or the half laps had been changed.

Another way to tell when the comber brushes are working is to turn the comber around at the point when the half laps are being cleaned by the brushes, and if the brushes are set to clean the half laps it will be readily determined when turning the comber driving pulley.

How many times has a comber man looked at a comber and seen in his estimation that the comber was doing good work and yet gone around to the back of the comber and pulled the waste chute cover off and seen the brushes throw the waste onto the doffer or onto the aspirator cage? In the latter case there is suction from the fan helping the brush to deposit the waste onto the aspirator. Maybe he thought the bushings were working O. K., and maybe they were but not as well as he thought. For instance, go to a comber that is operating as I have stated, or appears to be doing so, and go to the front of the comber and look closely at the half lap and you will find tufts of waste lodged between the brass matrices, then throw out the feed and run the comber for several minutes and watch the tail end of the waste and see if it does not contain bunches of neps or little tufts of waste. Please do that once in awhile. The fibers being combed by the half lap will be drawn down to the base of the half lap needles and get a better combing. All I say is, try it on so many combers a week.

Another thing I wish to mention is the half lap. Take, for instance, when a comber is being overhauled, some overseers demand that all half laps be replaced with new ones regardless of whether some of them require changing. I have seen where a few odd pins or needles have been bent or broken and the overseer insisted that they must be changed when this was foolish, because I know for a positive fact that it was practically an impossibility for a new half lap to make any difference in the work after the overhauling. Yet these same overseers would have you put those same half laps you took out of a comber you have just overhauled and put them into another comber that is doing the same kind of work or maybe better. Can you tell me if there is any common sense in a system such as that?

Now I do not want the readers to get the impression that I let any kind of a bad half lap go by me—far from it, but I do not condemn a half lap as bad just because there are a few needles bent or broken. If we were to change every half lap in such a condition we would be changing half laps all day.

One thing that pulls needles out completely from the brass matrice is permitting the tail end of the laps to run through the comber in place of trimming the end off and overlapping it with the fringe end of a new lap. Some people claim that it is bad soldering of the half lap repair man, but in my estimation it is bad comber tending and nothing else. If it is bad soldering, then why is it that you never see any needles pulled out on the first two or three or four rows on the half lap? The answer is maybe because the needles are much coarser and stronger and not as many to the inch or do not have any combing to do like the finer needles toward the back of the half lap, but that is not the answer in my opinion, for if it were bad soldering, even the coarse needles at the front of the half laps would drop or fall off, even though they do practically no work at all.

I really intended to touch on one or two more points on the comber, but I will let them ride until my next letter. One must not forget that "small leaks sink large ships".

Anyhow, the wrinkles I have mentioned are a change from the "half lap versus top comb" discussion, but that is going to crop up again to the advantage of all, for I am not satisfied with some of our

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previous discussions on that subject and intend to renew it at a later date.

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EDITOR COTTON:

"CONTRIBUTOR NO. 6355" requests on page 73 of January COTTON discussion on slashing 22s warp yarn, 3,000 ends per set, for a 96x64 construction cloth. In the writer's opinion he has picked for discussion one of the most difficult styles that the average gray goods mill has to contend with. It is difficult for two reasons. First, it contains a large number of ends of comparatively heavy yarn which increases the slasher's work, thereby making it extremely easy for bad work to occur on the slasher. Second, the cloth is a most difficult weave going to a highly critical market. Looms on this cloth are most sensitive to any defects in the work, particularly to defects from the slasher.

The first question—"What is the best squeeze roll weight?"—sounds simple enough to be answered in one sentence. But the writer can't forget an experience that occurred three or four years ago. There had been some trouble on a particular style on the slasher. We couldn't seem to get it dry no matter how slowly it was run. A suggestion was received to try adding weight to the squeeze rolls. We did, and sure enough, it made the yarn drier but at the same time it flattened it out to where it wouldn't run on the loom. So, keeping this experience in mind, we have found that we get best results from a back roll weighing 375 pounds with the front roll weighing 425 pounds. It should be added that these squeeze rolls are covered with burlap plus two blankets of generous length giving a roll with a nice cushion. In addition to this we pull the top blanket back twice during a set permitting fresh size and a better cushion throughout the running of the set.

Before leaving this question we would like to offer a few suggestions that should be of help if this man has had trouble getting the yarn dry enough:

Check the temperature of the size in the size box. We run ours at 204 degrees and have found that a temperature much less than this makes yarn hard to dry.

Try running the immersion roller so it is barely covered by the size. We have found this makes the yarn easier to dry and much easier to separate at the split rods. Running it deep in the box does not give any more size but makes the yarn inclined to tape and hard to separate.

Check the slasher cylinders to see that they are eliminating water properly. Any water in the cylinders causes them to be cooler and fail to dry.

Check the steam gauges with a master gauge. They get out of adjustment sometimes, registering higher than the actual pressure. They should be checked periodically.

The second query—"What is the best slasher cloth weight?"—brings up an interesting question. In our opinion a 16-ounce cloth gives the best all-around results. We know that an 18-ounce cloth will last longer but the lap marks are so heavy that the work suffers. We also know that a 14-ounce cloth gives lighter lap marks but a cloth of this weight is not economical as its life is so short. A nice saving can be achieved by studying the different price slasher cloths in any man's slasher room. We have tried several grades from the cheapest to the most expensive finally settling on one slightly cheaper than the most expensive. In the long run this cloth has proven to be much cheaper than the cheapest-priced cloth both from a dollars-and-cents and a quality-of-work viewpoint. A set rule cannot be named on this as the ideal cloth for a certain mill will depend on the kind of work he has, the acidity of his size mix, weight of rolls, speed of slasher, etc.

The last question is—"What is the most satisfactory amount of size to leave on this yarn?" As it comes from the slasher we try to leave from 10 to 12 per cent. We believe 12 per cent gives the best results. The average moisture in this yarn is 5 per cent which leaves a bone dry figure of 5 to 7 per cent. in this connection we are using a 40 fluidity thin boiling starch. We favor slow cooking and cook our starch 1¾ hours. The mix is then used up quickly—in about 30 minutes—which does not permit thinning down.

CONTRIBUTOR NO. 6362.

"Carder" Talks About Ears

Says he ran the English type builder before some of us were born—and suggests that "Wash" read The Scavenger Roll . . . . . .

EDITOR COTTON:

Well, my turn has come. "WASH" has picked me out for censure. You know I had a good laugh when I read his short comments about me on page 77 of the January issue of COTTON. He speaks about the length of ears. It is easy to judge the length of ears when you are continually looking in a mirror—the reflection is accurate. I thought at one time "WASH" was broadminded, but instead I must believe that he is looking in a mirror and sees only I Am. I am glad I was taught to believe that others' opinions were as good as mine and many times much better. It appears that "WASH" does not care for anybody who does not agree with him. I am censured because I have had the courage to state in writing that I disagree with him on many points. I intend to continue to do this as my past experience teaches me.

I want "WASH" to know that I hold no degree from a textile school and never expect to receive one. I will admit—and am proud to do so—that I have attended textile school and have learned to profit by my instructions. I will refer "WASH" and others to one paragraph in The Scavenger Roll on page 35 of the January issue. I'll do better than that: I'll quote it here:

Speaking of section men, we heard not long ago of a loom fixer who had become a second hand in this way: A young man just out of textile school

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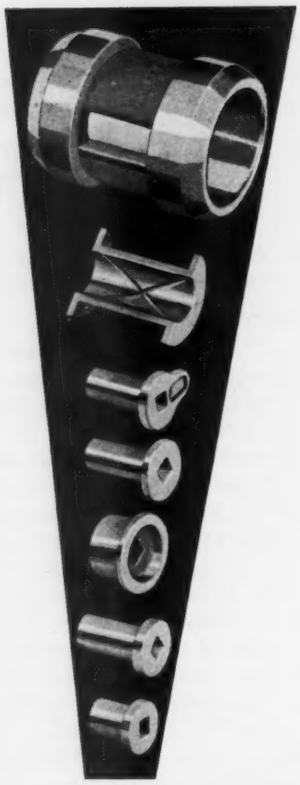

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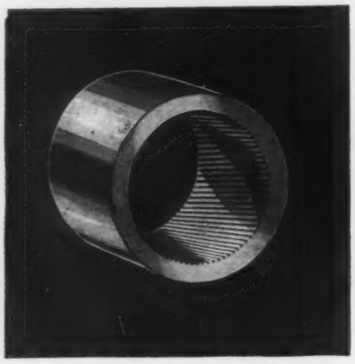

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(and who is now quite prominent in loom circles) was assigned to this loom fixer for weaving experience. Recently the promoted second hand told his overseer that the young man was responsible for his promotion, because 'when he was working down here with me, he asked me so danged many questions about a loom he made me sit up at night studying so I would be able to answer his questions next day.' So not all the bread cast upon the water comes back wet."

There are two things to be seen here: The section man saw the handwriting and interpreted it correctly and profited by it. Second, the textile student was practicing what he had been taught—when you do not know, ask why for information.

In the second paragraph of his letter, "WASH" states that my article is "another confession from a textile graduate that he knows nothing about the functions of the English builder."

Now let "WASH" note carefully: My first experience on the English builder motion was in 1903, which is quite a while ago, and that builder was not as easy to keep in proper operation as the present builders. These later ones have dead weights so arranged that the swing of the rocker is sure when either latch is tripped. On the old ones, they had been running close to 30 years then, and there were no weights, but in their place springs which caused the movement of the rocker when the latches were tripped. These springs at one time were presumably of one tension, but you can imagine the condition of the tension after 30 years under strain. The latches and rocker were not hardened as is now the case but were soft and were continually wearing. Then as now it was necessary to produce a good shaped bobbin and to do so it was necessary to follow the builders very closely. From my experience on them I learned much more about this particular builder than the present repair men, not because of any superior mind, but because of the many conditions arising as stated.

I do not know whether or not "WASH" will consider the foregoing statement as real experience or not, but I do know that I understand the functions of the English builder and can keep them operating correctly. I am going to write a little later about those two articles in the August and September 1933 issues which he requested me to read. Probably I will get a little better writeup from "WASH" sometime later if the looking glass is not too clear.

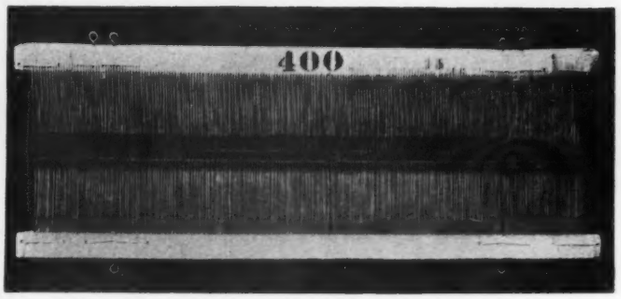
CARDER (MASS.)

Even Tension on Fly Frames

EDITOR COTTON:

The problem of maintaining an even tension on fly frames is one of the most difficult of all those connected with this machine. For an example, I am going to use a Saco-Lowell 8x4 speeder, assuming that the frame is in perfect running condition, that is, it is free from tight spindles, the carriage is running freely and nothing is binding that will cause the cone belt to slip.

On this 8x4 speeder it is recommended that the position of the cone belt be 2⅝-inch from the end of the cone at the beginning of a new set, and this rule should always be followed unless running a hank roving that is all out of proportion to the size of the frame, only in this case should the position of



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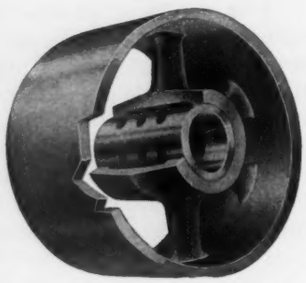

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the cone belt at the beginning of a new doff be altered.

When changing from one hank roving to another it is first necessary to figure the correct change gears to suit the desired hank roving to be made. For an illustration, say we are changing from 2.50-hank to 1.50-hank roving, not changing the weight of the roving in the creel.

Example: Change gears for 2.50-hank roving are, 43 draft, 40 tension, 30 twist, and 25 lay. To find the draft gear required for 1.50-hank roving:

$2.50 \times 43 = 107.5 \div 1.5 = 72$ draft gear required.

To find the twist gear required for 1.50-hank:

$\sqrt{2.50} = 1.58 \times 30 = 47.40.$
$\sqrt{1.50} = 1.22$
$47.40 \div 1.22 = 39$ twist gear required.

To find tension gear required:

$2.50 \times 40 = 100 \div 1.50 = 66\frac{2}{3} + 40 = 106\frac{2}{3}.$
$106\frac{2}{3} \div 2 = 53$ tension gear required.

Due to the different characteristics of cotton, different climatic conditions, etc., these figures are not always accurate and can only be used as a starting point. When a fly frame is started up again after changing the hank roving, it is advisable to watch the first layer wound on the bobbin and be sure that there is just enough opening between the strands to expose the surface of the bobbin at different intervals. Then the cone belt should be set at a position on the cone to cause the ends to slacken just the least bit as the carriage is making its top change, then the frames should be watched throughout the set to find if the tension gear used is going to follow through. If not, the tension gear should be changed up or down as desired.
suit the tension on the delivered strand when the

After the correct tension gear has been found to doff is complete, the frame should be watched carefully during the next doff to make certain that the tension gear will follow through. If it does not, the trouble will be caused by the lay, which should be changed according to conditions.

If the ends slacken at the beginning of the set, and then get tight at the finish of the set, the lay is too close. For a trial, the lay gear should be changed two teeth larger, and the tension gear two teeth smaller if necessary.

If the ends run tight at the beginning of the doff, and then slacken as the doff is completed, the lay is too wide, so the lay gear in this case should be changed two teeth smaller and the tension gear two teeth larger if it is required.

Now that I have tried to explain this subject so as to be of possible help to someone, I realize that it is most impossible to tell anyone just what to do under certain conditions without a thorough investigation of those conditions.

In closing, I would like to ask someone to explain to me just how the taper of a roving bobbin is changed by changing the tension gear in relation to the lay gear. All the readers know that this practice has been advocated in the "How Other Men Manage" department, and I would be glad to have someone explain to me just how this feat is accomplished.

T. R. (N. C.)

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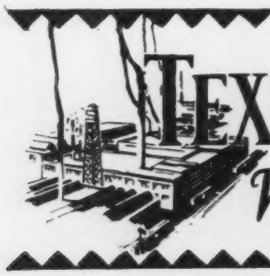

TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

2. Pepperell Equipment—10 page illustrated booklet showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments, installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

11. Whitinsville Rings—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

15. The Powers System of Thermostatic Control—"Slasher room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein, Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

25. "Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full fashioned knitting.

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. Efficiency and Performance of SKF Roller Bearing Spindles—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

65. Why Cooper Hewitt Light is Better Than Daylight—A 16 page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

69. Monel Metal Equipment for the Textile Industry—A 50 page buyer's guide and catalog with more than 100 illustrations of various items of monel metal dyehouse equipment. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages, and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

93. Metso — Describing this industrial cleanser which has wide use in industrial cleaning of metals, floors, etc., and is used in kier boiling, silk and rayon degumming. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

94. New Development by Onyx — Eight page booklet describing and giving uses of new developments in sulphonated aliphatic compounds . . . called Aliphatic Ester Sulphate and Glyceryl Sulphates. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

97. Suggestions For The Modern Silk and Rayon Throwster — describing the various uses for Laurel Brand Products and giving valuable suggestions in silk-soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., 2600 East Tioga St., Philadelphia, Pa.

98. Saving Labor, Material and Power in the Textile Industry—A 20 page booklet showing the advantages and typical installations of temperature, pressure and humidity instruments and controllers in various processes of textile manufacturing. Foxboro Co., Foxboro, Mass.

104. Warp Sizing. National Oil Products Co., Harrison, N. J.

105. Mildew Prevention. National Oil Products Co., Harrison, N. J.

106. Cotton System Warp Sizing on Multiple Cylinder Machines—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk.—Charles B. Johnson, Paterson, N. J.

107. Complete Information on Alemite Lubrication. Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Bldg., Chicago, Ill.

110. 3-In-One for Industrial Uses—showing the many industrial uses and advantages of this oil. Three-In-One Oil Co., 70 Varick St., New York, N. Y.

114. Denman Parts for All Makes of Looms—showing drawings and dimensions of Denman pickers, hold-ups, bumpers and bunters made of fabric and vulcanized rubber. Denman Tire & Rubber Co., Warren, Ohio.

115. How to Cut Cloth Room Costs with Automatic Picking Machines and Improved Inspecting Machines—Hermas Machine Company, Warburton Ave., Hawthorne, N. J.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch, and its many advantages. Drake Corporation, Norfolk, Virginia.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

119—The World's Finest Sewing Machines—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

120. Goodyear Mechanical Rubber Goods Catalog — 40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

121. Engineered Packages for the Textile, Dry-Goods and Apparel Industries—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

122. Water Filters and Filtration Equipment—Containing complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York, N. Y.

123. An Outline of History for Anti-Friction Bearings—a treatise outlining the development of anti-friction bearings from their earliest appearance in history to their present important position in industry. Fafnir Bearing Company, New Britain, Conn.

125. More Light with Lasting Cleanliness—a booklet pointing out the many advantages of white paint and the qualities to be looked for to get the greatest value in such paint. U. S. Gutta Percha Paint Company, Providence, R. I.

135. The Pick Method of Weaver Wage Payment—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables included. Durant Manufacturing Co., 1932 No. Buffum St., Milwaukee, Wis.

139. Textile Detergents—Theory of the use of alkalis and control of pH.—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergents in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree B'dg., Atlanta, Ga.

140. Textile Machinery—Improvements in Design and Methods of Lubrication. A discussion of the problem of lubrication of textile equipment, covering operating conditions and factors affecting and affected by lubrication. Card Room Operations, Twisting and Spinning Machines, Silk Throwing, Looms, Knitting Machines, etc., covered. Available in copy of June 1934 issue of "Lubrication." The Texas Company, 135 E. 42nd St., New York City.

145. Never Buy Sponges in the Rain—a booklet outlining the importance of knowing the percentage of moisture in a given textile in the buying and selling of the same and in connection with the working of textile fibres in the process of manufacturing the goods, also showing different types of conditioning ovens for determining moisture content. Emerson Apparatus Co., 174 Tremont St., Melrose, Mass.

146. Lubrication Cost Recording—Outlining the factors to be considered in determining correct lubrication costs, and showing a number of typical lubrication cost sheets to assist a mill in installing an efficient lubrication cost system. Gulf Refining Company, Department C, 3800 Gulf Bldg., Pittsburgh, Pa.

147. Let's "CAN" The Oil Can—describing permanently sealed bearings for life, and for higher speeds and temperatures single seal ball bearings which have to be lubricated only from one to three years. New Departure Mfg. Co., Bristol, Conn.

148. Leather Packing—28 page booklet giving timely hints on the proper selection and installation of leather packings, the various types available, sizes and prices. Alexander Brothers, Inc., 406 N. Third St., Philadelphia, Pa.

149. Vim Short-Center Drive with Vim Tred Leather Belting.—16 page booklet outlining the special requirements of belts for short-center drives and the proper adjustment to give the highest efficiency. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

150. Engineering Date Book on Mechanical Rubber Goods—21 pages of useful information and engineering data, designed to simplify the selection of belting, hose and other mechanical rubber goods for industrial service, including a review of belting requisites for a wide variety of uses as well as helpful tips on installation procedure. B. F. Goodrich Co., Mechanical Division, Akron, Ohio.

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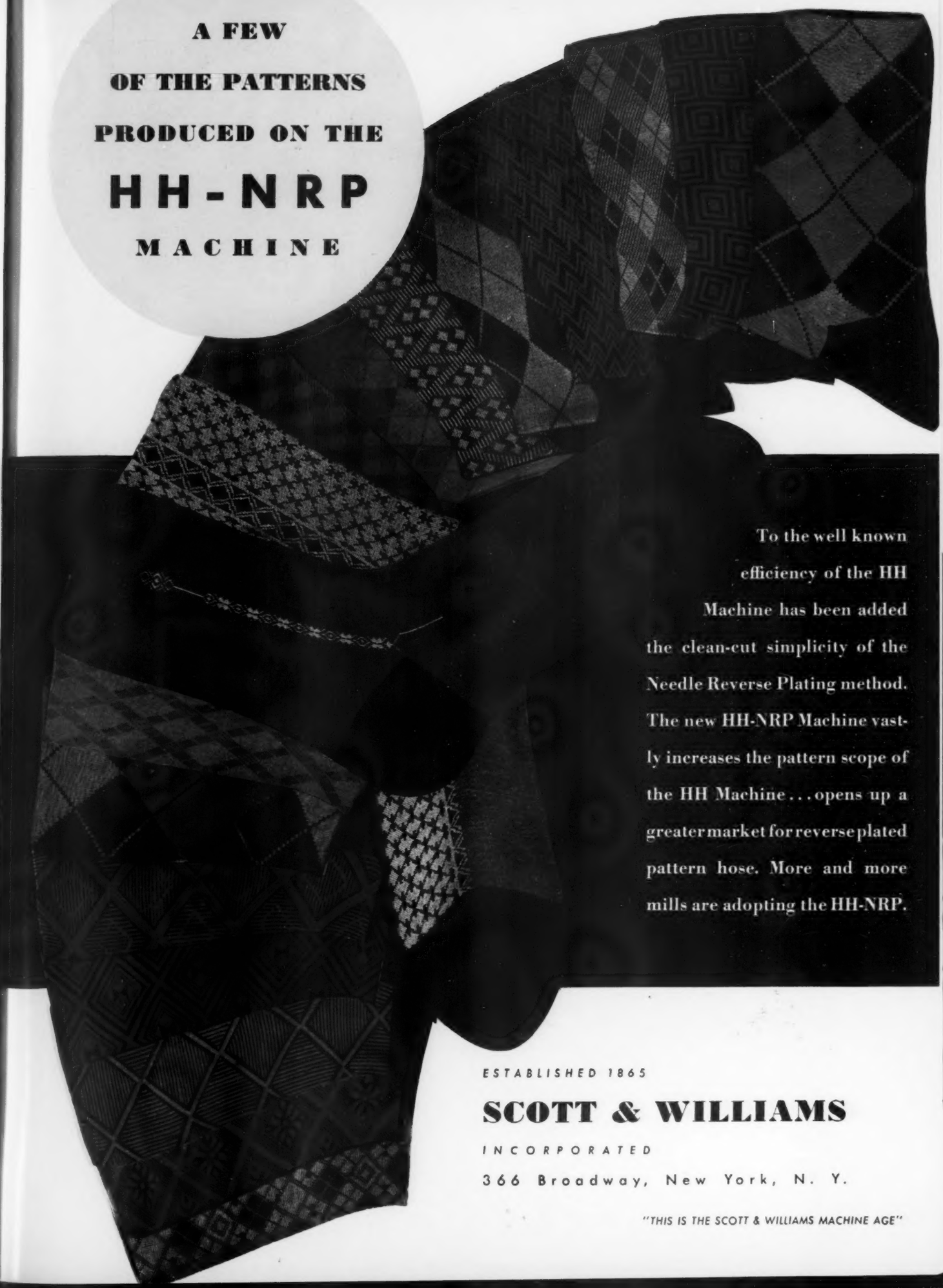

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There's a growing demand for these exclusive half hose. Meet it with the Standard 80 W Shog machine. The variety of the effects you can achieve with this machine—and *only* this machine—is almost unlimited! The market is there. The Standard 80 W Shog is the answer!

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STANDARD-TRUMP
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KNITTING SECTION

Science Joins Hands with the Hosiery Examiner

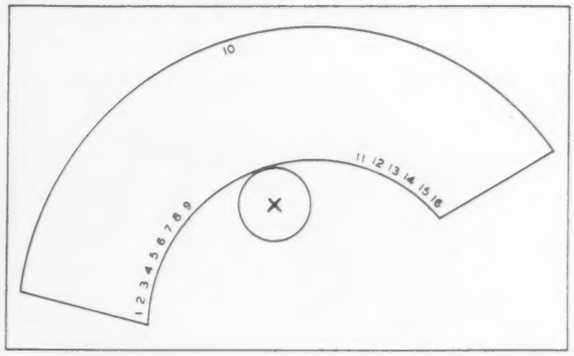
By Milton M. Abrams

FOR some few years classifying and pairing full-fashioned hosiery was done on flat-top rectangular wooden tables—evenly planed down and sandpapered as smooth as possible. By hosiery classifying and pairing is meant taking the hosiery after it has been boarded and grading it into "first quality" grade, "irregular" grade, "second" grade, "third" grade, "menders", etc., and pairing each grade. The old system was to pair and grade in one operation. The pairers' table was usually left in natural grain wood. Sometimes it was varnished—in a few cases painted a dark brown or green.

Hosiery mills were dark and poorly lighted. Whatever light there was that filtered through the small and not-too-numerous windows was intended for the knitters. Their machines were usually placed in the better lighted portion of the mill. The finishing department was subordinated and took what was left. It was not very important in the days of 12- and 10-thread goods and 12-inch and 15-inch silk boot hosiery. Then the popular hosiery shades were black, navy blue and cordovan. Gradually as the years passed, sheerer hosiery came into vogue and chiffon became the popular weight in four and three thread constructions. The popular colors for a season now averaged eight or ten shades varying from the daintiest flesh pinks to the darkest gunmetals.

THROW OUTS	
Cause	Quantity
Slugs	
Mended in Grey	
Sleazy Work	
Bad Topping	
Uneven Denier	
Turned in Picot	
Short Lengths	
Bad Foot Matching	
Bad Splicing	
Bad Foot Plaiting	
Bad Leg Plaiting	
Needle Marks	
Bad Looping	
Bad Seaming	
Soiled	
Total	

The tally card for itemizing defects . . .



A sketch of a scientifically designed examining table, showing location of operator "X" and where each type of grading is placed on the table . .

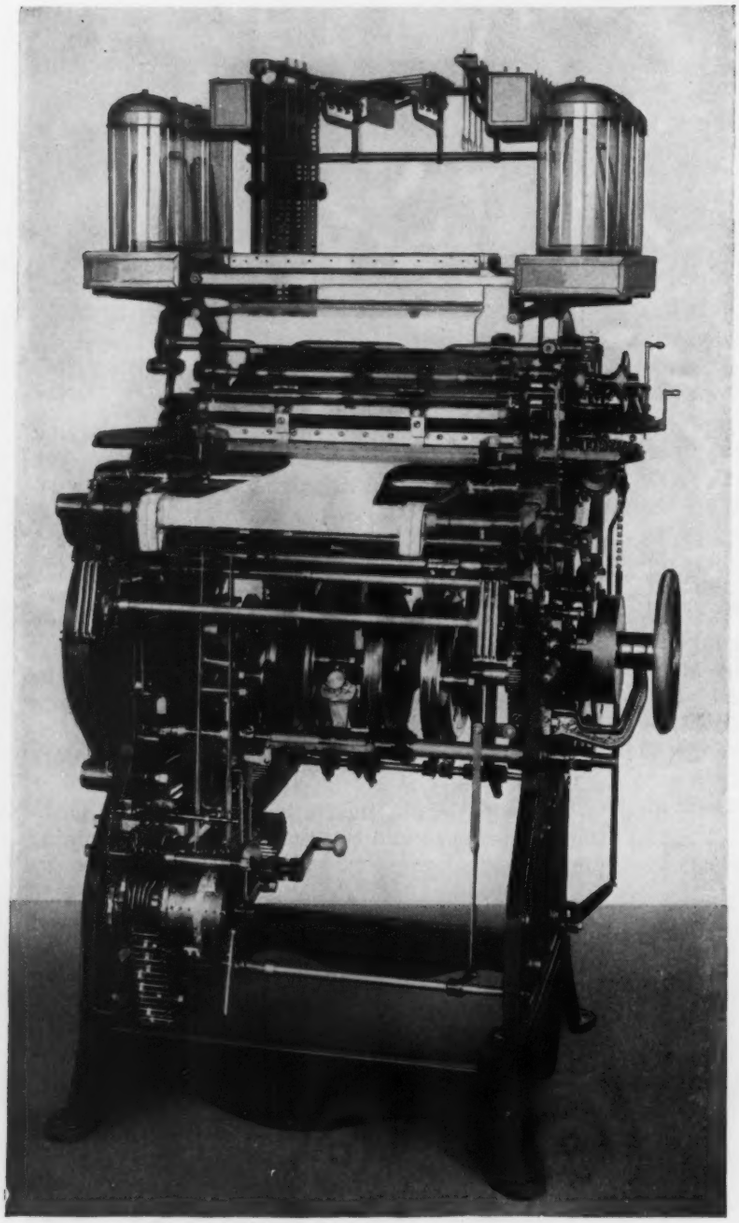
With the advent of sheer hosiery in varying shades came the necessity for better inspection and more careful selection in pairing. The finishing department was moved to the brightest and choicest part of the mill. Pairing tables were painted light greens and light greys because it was found that imperfections such as silk slugs, shadows, topping lines, etc. showed up best against a light background. Many superintendents decided after experimentation that a table top of cream white or light buff made the best background for classifying and pairing hosiery. Today that is what is found in the finishing departments in many of the modern up-to-date hosiery mills.

Herewith is an illustration of a modern scientifically designed and constructed hosiery examining table.

The drawing illustrates the top of the table. It is half moon in shape. The left side is six inches lower than the right hand side which is chest high to the normal girl. The average person is right handed and therefore the right arm has a higher arc of movement than the left arm. As a result the operator can work at this table from right to left without tiring her arms. The examiner or classifier stands at the position marked *X* on the illustration. The semi-circular construction enables the examiner to stand at *X* and reach virtually every part of the table without necessitating moving about. Careful time and motion studies prove that much efficiency is lost at the old time rectangular table because the operator has to move about in order to reach all the corners and sides of the table.

The old-fashioned method was to classify hosiery into firsts and throw-outs. Afterward the throw-outs were paired up individually into irregulars, seconds, thirds, etc. Occasionally lots were checked to find the percentage of first quality goods obtained from the dye lot. If the throw-outs were too heavy the superintendent was called in and "raked over the coals". He would go over the throw-outs with the head of the finishing department and make a few

The WILDMAN *Single Head*
FULL-FASHIONED HOSIERY MACHINE



—"Speed—and accuracy

•

"Simplifies the work of the knitter . . . reduces the amount of time a section or head is not knitting—

•

"More automatic features

•

"Semi-automatic welt turner. Simple—practically eliminates drop stitches.

•

"Automatic Rack back—

•

"Other basic, important advantages you should know about."

WILDMAN
THE WORLD'S STANDARD

LITERATURE ON REQUEST

•

WILDMAN MFG. CO., *FULL-FASHIONED DIVISION*, NORRISTOWN, PA.

notes of the general defects. This method was crude and ineffective.

On the new table each defect has a separate place and the operator deposits the defective hose in the section set aside for that defect. The defects are laid out on the table as follows (reading from left to right):

1. Slugs
2. Uneven Denier
3. Mended in grey
4. Sleazy work
5. Bad topping
6. Bad foot matching
7. Bad splicing
8. Bad leg plating
9. Bad foot plating
10. Press mending
11. Needle marks
12. Turned in picot
13. Short lengths
14. Bad looping
15. Bad seaming
16. Soiled and dye spots

When the lot has been completed by the examiner, the count of firsts and defective throw-outs is entered on a tally card (see illustration) on which all the defects are itemized. Each operator has a reference chart on which is listed the standard number of firsts to be derived from each quantity of dozens dyed for an order. If the lot has run below the standard average percentage of firsts established on the reference chart, the throw-outs are checked over to ascertain what defects are abnormal (exceeding the alloted percentage). These are called to the attention of the mill superintendent. He then has a specific problem to correct and can proceed to eliminate the manufacturing fault which was responsible for the heavy throw-outs. These cards can be totalled each week and a record made of the defects causing all throw-outs. These records are of great help as statistical information on throw-outs. They give the mill executive a clear picture of the quality of the hosiery the mill is manufacturing and the excessive percentage on any defect will show up and demand attention.

Hose Production in U. S. Passed Hundred Million Dozen Pairs During 1934

Hosiery production by American mills during 1934 reached a total of approximately 104,000,000 dozen pairs, according to the monthly statistical bulletin of the Hosiery Code Authority. Of this amount, approximately 30,500,000 was full-fashioned hosiery and the balance seamless hosiery of various types.

Production during December was 8,000,000 dozen pairs, as compared with 9,500,000 in November, and with slightly over 6,000,000 dozen pairs in December 1933.

Shipments during the year were 103,400,000 dozen pairs, as compared with 105,000,000 during the previous year. Hosiery shipments in 1934 were higher than any year since 1929, with the single exception of 1933.

Shipments of full-fashioned hosiery during the year were 31,500,000 dozen pairs—approximately the same as in 1933. Shipments of seamless hosiery in 1934 were 71,900,000 dozen pairs, as compared with 73,800,000 dozen pairs in 1933, and prior to that had not been exceeded since 1929.

Average monthly shipments during 1934 were 8,500,000 dozen pairs, of which 2,500,000 dozen pairs were full-fashioned and 6,000,000 dozen pairs seamless. December shipments were 8,000,000 dozen pairs, as compared with 9,000,000 dozen pairs in November, and with 6,000,000 dozen pairs in December 1933.

Stocks on hand at end of 1934 amounted to 17,000,000 dozen pairs, as compared with 16,000,000 at the end of 1933. Of this amount 3,500,000 dozen pairs were full-fashioned and the remaining 13,500,000 were seamless. The December 31st stocks were lower than at any time during 1934, with the single exception of stocks on hand as of January 31.

This fact can be accounted for, primarily, by reduced stocks of full-fashioned hosiery, which on December 31 were lower than at any time during the fifteen months covered by the Code Authority's report. Seamless stocks as of December 31 were higher than at any time during the year, with the exception of the months of April to July, inclusive.

As will be noted from the data of stocks on hand and on average monthly shipments, the Hosiery Industry was on the first of January, supplied with approximately two months' demand requirements. This is borne out by the bulletin's figures on stock turnover, which indicate that for the twelve-month period ending December 31, the average rate of turnover was approximately every sixty days. This rate has been maintained for the similar periods ending with each of the five preceding months.

Turnover at a rate of seven times a year or more is reported for women's full-fashioned silk hosiery, men's seamless rayon hosiery and boys' golf stockings. A turnover rate of less than four times per year was reported for men's full-fashioned silk hosiery, women's seamless wool hosiery, men's seamless silk hosiery, men's seamless wool hosiery, infants' socks, and misses' ribbed goods.

The February bulletin, which brings the information up to date through December 1934, is the first bulletin of the Hosiery Code Authority to cover a complete calendar year. It contains summarized statistics on production, shipments and stocks on hand for each type of hosiery, compared with such data as are available for the year 1933.

New charts and tables are included presenting the comparisons now made available in graphic form. A table has been added giving shipments for each year from and including 1929 through 1934. Figures for the latter part of 1933 and 1934 are obtained from reports obtained by the Hosiery Code Authority. Information for the years from 1929 through June 1933 is estimated from reports of the United States Bureau of Census. A new chart has been added showing the monthly average shipments for each year and each half-year during the period, and tables have been added showing similar information.

* * *

Knitting Arts Exhibition, April 22 to April 26

The 1935 Knitting Arts Exhibition, sponsored by the National Association of Hosiery Manufacturers, to be held as usual at the Commercial Museum in Philadelphia from April 22 to April 26 inclusive, bears every indication of being more successful than last year's exhibition. Advance space reservations which are already over 85 per cent of the total space taken last year, indicate a keen interest on the part of manufacturers of materials and equipment used by the knitting industry, according to the sponsors.

Attendance on the part of hosiery manufacturers promises to be fully as large as last year. The new floor plan used last year, which met with such high approval on everybody's part, will be carried out again in this year's exhibition.

The annual convention of the National Association of Hosiery Manufacturers will be held in connection with the exsibition, on Tuesday, April 23. This meeting will be held at the Bellevue-Stratford Hotel. In addition, it is expected that other conferences will be held in connection with the exhibition.

A complete line of braiding machines designed and built for efficient production of:

Tapes
Bindings
Fish Lines
Shoe Laces
Packing
Round
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Rug Braids
Candle Wick
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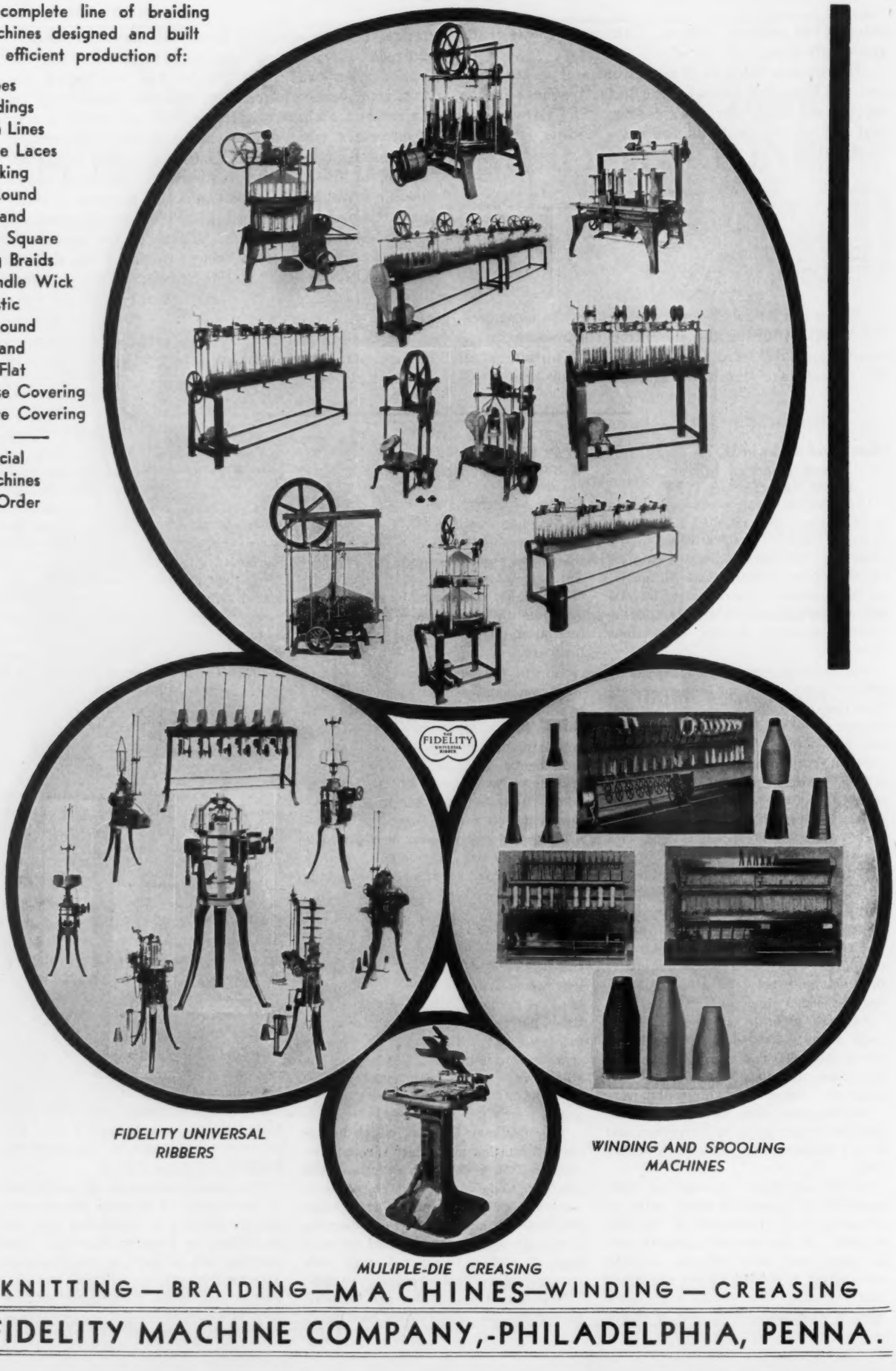

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FIDELITY MACHINE COMPANY,-PHILADELPHIA, PENNA.

Wants Methods of Handling Full-Fashioned Odds at Mating Table

EDITOR COTTON:

We would like very much to know what different methods are used by maters in full-fashioned mills in cleaning up at the completion of the mating job of each batch of hosiery. There are, in addition to the paired or mated perfects, irregulars and seconds, a variety of throw-outs and odds. What classifications do different mills use for these odds and throw-outs? What does the mater or pairer do with them in order to complete her work on the batch?

Do the menders, re-boards, and mis-mates remain together as a batch, or are they disposed of separately?

Is any successful attempt being made to re-dye and re-process stockings from one batch with those of similar batches?

Is any successful attempt being made to re-board all throw-outs from one batch with the hope of reducing the ultimate odds to a negligible quantity?

Has anyone found it profitable to dispose of such odds and throw-outs by doing no more work on them and throwing them directly into seconds?

We shall appreciate all possible information from full-fashioned mills on these questions.

CONTRIBUTOR NO. 6363.

Preventing Tuck Stitches on the R I

EDITOR COTTON:

I would like to discuss with the readers of your "KNITTING KINKS" department a few of the things with which we have been confronted lately in connection with tuck stitches on Model RI machines. One of the worst troubles we have had has been tuck stitches on the dial needles and I would like to tell a few of the things we have found that caused these.

The most common cause has been the dial being too high so that the saw sinker fails to push the stitch off of the cast-off, causing the cast-off to hold the stitch and resulting in a tuck stitch. Another thing is the dial being too low, which prevents the fabric from passing between the dial and the saw sinkers freely, causing the fabric to push up on the saw sinkers and resulting in a tuck.

Another cause is a weak spring on the saw sinker cam, on the left side, causing the cam not to push the saw sinkers in far enough to push the stitch off of the cast-off.

Then a few times we have stopped tucking by running the left-hand bumper screw in, but the fixer must be careful about moving the bumper screws or he will get too long and short a stitch in the heel and toe, so it is seldom that we move a bumper.

Another cause is that sometimes there will be a burr on the saw part of the saw sinker and the fabric hangs on the burr and sometimes fails to push the stitch off of the cast-off. The best way to fix that is to put in a new sinker, for it is hard to polish a burr off of a sinker and make it run good afterwards.

A few times we have found burrs on the nose of a plain sinker, causing tuck stitches, but it is usually an awfully bad burr that causes tucking on a plain sinker.

Another cause is bad dial needles; sometimes there is a rough place either on the cast-off or grooved hook, that is hard to see, but rough enough to catch the thread and cause tucking. These needles of course should be replaced with new dial needles.

Another cause we have frequently found is that the dial will slip and the dial needles will not track in the center between the cylinder needles. They should track right over the saw sinkers and center between the cylinder needles.

Still another cause is that sometimes the rib cam would be set too far in and the cast-off would not go out far enough to release the stitch, but a fixer has to be very careful in moving the rib cam. If it is out a little too far. it will break the butts off of the cast-

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

Behind the scenes at the hosiery counter.

Regardless of price range, the customer's decision inevitably hinges on the clearness and sheerness of the fabric. That we are America's largest producers of Spring-Beard Needles and that nearly all manufacturers of fine quality silk stockings are standardized on Royersford Needles is a tribute to dependable results.

The prescription for better knitting

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ROYERSFORD NEEDLES

offs, or if it gets in too far it will break the butts off of the grooved hooks.

A few times I have found tucking caused by the cylinder needles being out of line. Then several times I have found the springs weak on the thrust bar that pulls the saw-sinker cam down. This would cause the cam to jump and miss part of the saw-sinkers resulting in tuck stitches.

I remember some time back we were working on a 24-gauge RI machine and some of our dial needles would cut the stitches and others would tuck, so after we had tried about everything we knew to do, to no avail, I took one of the cast-offs and one of the grooved hooks and looked at them closely and found that when the cast-off hook went in the groove in the grooved hook, the hook was so close to the top of the groove that it sometimes missed the stitch, so we took the hook on the cast-off and bent it downward until it worked close to the bottom of the groove in the grooved hook and we did not have any more trouble of cutting or tucking on that machine.

These are a few of the causes we have found for tucks on the RI machine, and if they help anyone else I am glad to pass them along, or if anyone else knows any more about an RI machine I would like to hear from them through "KNITTING KINKS".

CONTRIBUTOR NO. 6373.

Disposing of Three Carrier Press-Offs and Spoiled Stockings

EDITOR COTTON:

Since installing three-carrier attachments on our full-fashioned hosiery machines, we find that it is quite a problem to dispose of press-offs and spoiled stockings in the gray. Formerly, in operating single carrier machines, the press-offs as a last resort could be backwound on coning machines to reclaim the material, but three-carrier press-offs cannot be backwound. I would be interested to know how others are working to solve this problem.

CONTRIBUTOR NO. 6364.

What Causes Slackness on Edges of Full-Fashioned Fabric?

Does your experience agree with the causes this man suggests, or do you find other causes? . . .

EDITOR COTTON:

One thing that has given me quite a bit of trouble in knitting full-fashioned hosiery is a looseness at the edges on either side of the fabric. This is more noticeable in the wide part of the boot or to the main narrowings. I have taken all ordinary means such as the proper gauging, etc., and, too, I might say the verge plates are in good condition, so what would you suggest I try next? I have my ideas or theories but don't know that they are right, but I will set them down here:

First, when the slur-cock strikes the first few jacks, the sinkers are thrown forward farther than the remainder of the sinkers because the tension on the silk increases just a bit more away from the selvage and will hold the sinkers in check. Second, the loose course is always on the starting side and not on the finishing side. Third, by running the slur-cock forward as far as safety will permit, we can improve the fabric.

I would like to know whether other mills are bothered with this kind of trouble and whether any of your readers can offer suggestions in addition to the points I have mentioned. We are knitting our silk direct from cones; that is, we are not conditioning or re-winding.

CONTRIBUTOR NO. 6371.

Helpful Hints On Standard Knitting Machine Fixing

(Editor's Note—This is the seventh of a series of articles discussing the parts of Standard knitting machines and giving helpful, practical suggestions on fixing them. The first article appeared on page 129 of the April issue and gave a history of these machines. The second article, on page 127 of the May issue, covered the parts shown on Plate I in the Standard catalog. The third article, covering Plates 2, 2A and 3, was on page 105 of the July issue. The fourth article, covering Plate 4 and 5, was on page 101 of the September issue. The fifth article, page 105, November issue, covered Plate 6. The sixth article, on page 107, January 1935 issue, covered Plates, 8, 9, 10, 11 and 12.

The numbers in parentheses following the names of parts are the numbers used by the machine manufacturers for the various parts. It is suggested that the reader refer to the plates in question in the Standard catalog in reading these discussions, and that he clip these articles and file them in the catalog with the various plates for further reference.)

Standard Plate 13

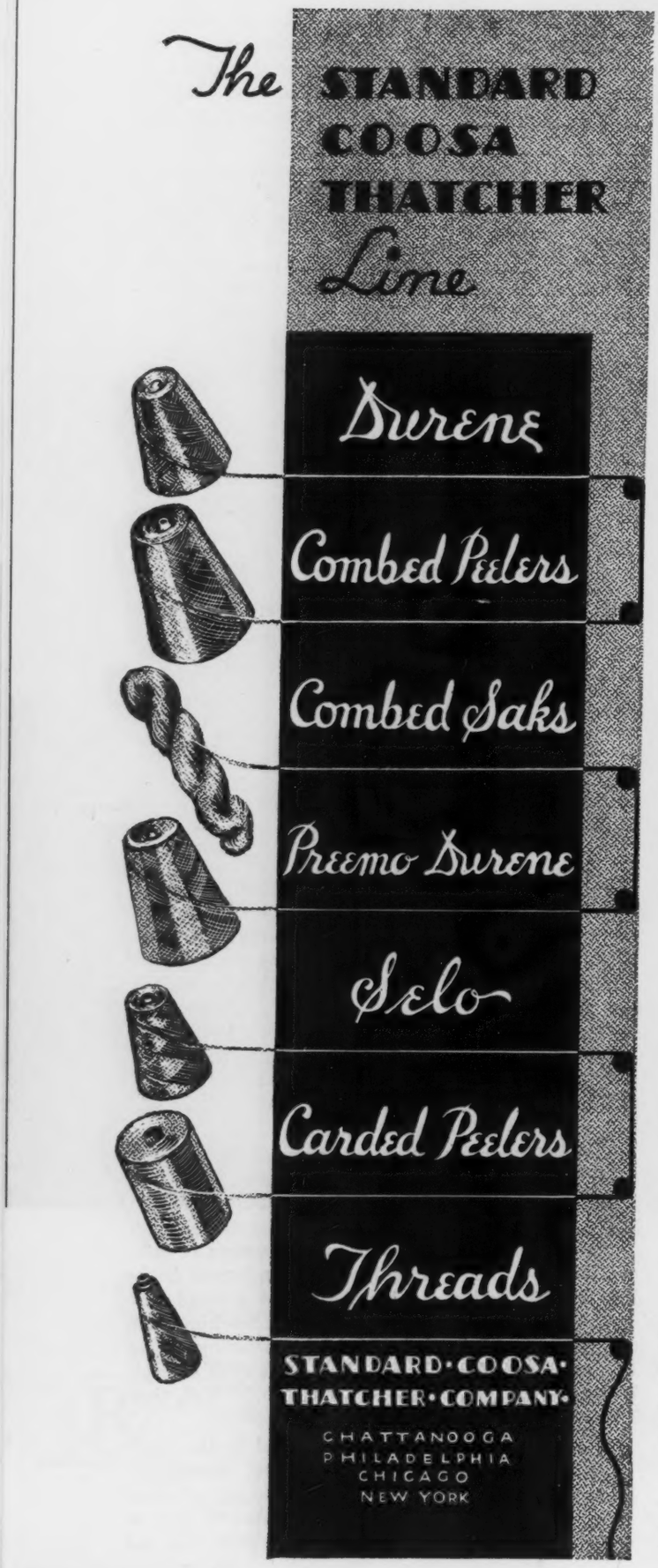
Drive and Clutch Parts

EDITOR COTTON:

The drive and clutch parts shown on the upper part of Plate 13 of the Standard catalog and the segment details shown on the lower part constitute another compact and efficient unit of the Standard machine. It is obvious that these various parts did not simply happen overnight. No doubt it took days, weeks, yes months of constant effort to design each individual part before it was finally adopted as being entirely satisfactory in every respect.

Most circular machines are equipped with a high speed, intermediate speed and a loose pulley. Standards have only one driving pulley (K-26) and the loose pulley (K-27). The driving pulley is held rigidly to the shaft (K-603) with two set screws (e-813) and the loose pulley is equipped with a bronze bushing (K-930) which can be replaced at a small cost when it becomes worn. I once heard a machine fixer complain about loose pulley bushings wearing out in just no time. When asked how often he oiled the pulleys, he said, "Oh, about once a month." Well, they should have worn out.

The driving pinion (K-610) is held to the shaft (K-603) with a large taper pin (K-1164) consequently the pinion does not work loose or get out of order as key-seated pinions often do. The pinion (K-610) is made of steel, which means that the teeth will not

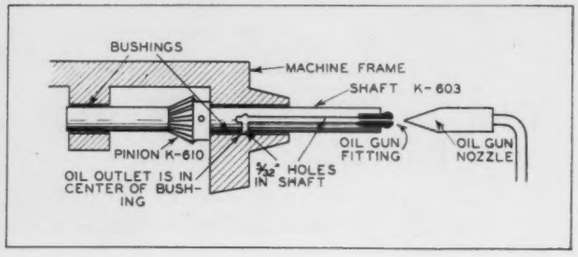


break out when they become worn as small cast iron pinions often do when used for this purpose.

Two bearings are provided for shaft (K-603), one on each side of pinion (K-610) as shown in the cut on the upper part of the plate. Earlier models did not have bushings (K-930) for shaft (K-603), the frame itself provided the bearing surface; later models were equipped with bushings as stated on the plate. The inner end of shaft (K-603) and its bushings are not subject to a great deal of wear, first because of a minimum amount of pressure or friction, and secondly because it is a simple matter to keep the bushing well oiled. The outer bearing, however, presents a different problem. It is subject to wear for several reasons, and therefore should be given more attention.

First, the downward pull of the belt is bound to cause wear on the bushing (K-930) toward the back and in a direct line with the shaft on the floor. Secondly, there is a possibility of the oil passage in the frame leading to the bushing (K-930) becoming clogged, resulting in the shaft and bushing running without oil. Should this occur, both shaft and bushing would be damaged in short order. Such occurrences can rightly be charged to careless oiling, but they do happen and the only solution to this problem is to make a positive oiling arrangement for bushing (K-930). This can be done as follows: Drill a 5/32-inch hole in the shaft (K-603) from the outer end deep enough so the end of the hole will come in the center of the bushing (K-930). Cross drill the shaft 5/32-inch so the outlet holes will also be in the center of the bushing (K-930). Re-drill and tap the outside end of the shaft (K-603) so it will take an oil gun fitting like those used on many motor cars of today. This fitting is ball-shaped, has a flat face and a small hole into which a needle pointed nozzle is held and the oil forced through under pressure.

By arranging an oil line in this manner a supply of clean oil is put in the center of the bushing; the old oil is forced out and some of the oil in the shaft



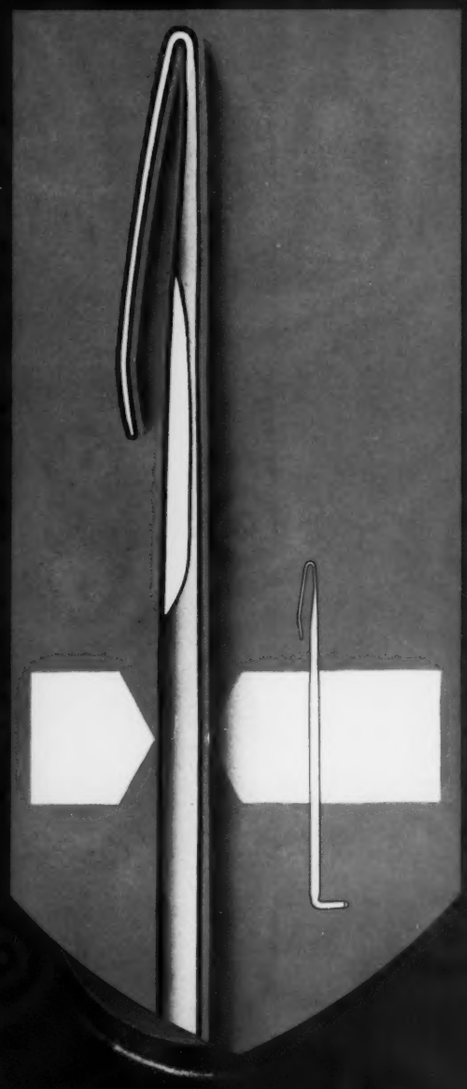
Positive oiling arrangement for outside bearing on Standard H drive shaft . . . . . .

will drain into the bearing while the machine is in motion. Using this arrangement and oiling machines once a week with a fairly heavy oil (not grease) will prevent worn shafts and bushings and save time and cut repair bills. A sketch of the oiling arrangement is shown herewith.

The main difference between the driving mechanism on Standard machines and other circular knitting machines is that all shafts except (K-603) are set in a vertical position on Standards and in a horizontal po-

MACHINE-MADE MEANS

Uniform Width Where Stitch Is Laid



Here is an instance where the benefits of machine precision in needle making are evident. Because the width of the needle at the point indicated in the drawing determines the size of the stitch, uniform width at that point is as important as the proper alignment of the needles themselves.

That is why the unfailing accuracy of machines is applied in controlling the width of Torrington needles ... why machine precision extends into every detail of their manufacture ... width, length, temper and all the minute factors that make for complete uniformity.

Torrington needles are made by machines ... with mathematical accuracy. You will find precision reflected in their uniformity ... and in the accuracy of their performance.

OUR PHILADELPHIA RENEEDLING PLANT

1 Every job handled by experts with special modern equipment.
2 Each job kept intact on an individual truck throughout the process.
3 Bars are washed in a special fluid; scrubbed with revolving brushes.
4 Bars are straightened with a special device; brasses resurfaced; slots checked mechanically.
5 Bars filled with Torrington needles; straightened and gauged three ways; spaced also—by gauge.
6 Beards raised uniformly; checked by gauge for height and central setting.

TORRINGTON Spring Beard **NEEDLES**

Get rid of WEAK SPOTS

FOR UNIFORM KNITTING USE NEEDLES THAT ARE *UNIFORMLY GOOD*

Weak spots, uneven wales, skipped stitches—these are costly knitting problems. You can't always blame your needles for these faults, but *sometimes* you can. If the finish isn't uniformly smooth, if the rivet isn't secure, if the temper isn't right—then you can expect trouble.

Good needles will help you to avoid many troublesome errors in knitting. That is why we use such exacting care in the making of Torrington needles. Torringtons are made by machines... machines that are unvaryingly accurate in steady production, hour after hour, day in and day out. You will find this accuracy and dependability reflected in the performance of Torrington needles.

They are *right* in every detail—uniformity, temper, rivet strength, finish. Good knitters everywhere say that Torringtons can be depended on to do fine work... produce fabrics of the highest quality—consistently!

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TORRINGTON NEEDLES
Latch

sition on other machines. Placing the shafts in a vertical position and arranging the segment gear (K-8) and oscillating cams (K-17) and (K-16) as shown on the plate, makes possible the extreme narrowness of the Standard H; it requires but 16 inches of floor space against 22 to 24 inches for other circular machines.

The pinion (K-610) drives the main gear (K-6). This gear drives the upper pinion (K-626) and provides the circular motion for the cylinder when the clutch is up through the hub (K-61) and gear (K-1393) which are attached to shaft (K-628). Both the main gear (K-6) and hub (K-61) are attached to their respective shafts with large taper pins (K-1163) and (K-1165). Much could be said in favor of using taper pins in place of keys or set-screws to fasten the various gears, etc.; suffice it to say that taper pins do not break, work loose or become stripped as set-screw and key arrangements frequently do. Taper pins are used extensively on Standard machines; they save a great deal of time in dismantling and re-assembling various units.

Clutch, Oscillating Cams and Segment Gear

The clutch (K-625) revolves with the shaft (K-628) and is held in position by the clutch key (K-872). The clutch is raised and lowered by the shifter fork (K-9) shown on Plate 17. When the shifter fork is in the lower position the clutch forms contact with the lower pinion (K-627) and reciprocating motion for the shaft (K-628) and cylinder is provided by the oscillating cams (K-17, K-16) which are driven by the main shaft and which in turn drive the segment gear (K-8). Part of the segment gear (K-8) is not shown on the plate. The omitted portion is an extension which begins where the shaft (K-608) passes through the segment gear and extends forward to the oscillating cams.

The complete segment gear is shaped somewhat like a horseshoe. The end of the extension just referred to can be seen in the upper part of the plate; stud (K-606) passes through it forming a bearing surface for roll (K-604) which rides against the lower oscillating cam (K-17). Stud (K-1168) which passes through the segment gear (as shown on the bottom of the plate) also carries a roll (K-604) which rides against the upper oscillating cam (K-16) just opposite the extension referred to.

The reciprocating motion for the segment gear is produced by the oscillating cams revolving between the two rolls (K-604) which ride against the respective oscillating cams on opposite sides. Stud (K-1168) is adjustable so that all lost motion between the two rolls (K-604) can be taken out.

The ability of Standard machines to run successfully at high speeds while reciprocating, without abnormal needle breakage, cylinder wall jam-ups and the like which are usually caused by raising and lowering pick failures, is due in part to the expertly designed and carefully made lowering and raising pick assemblies. The real reason why Standard machines will run at such unusually high speeds lies in the oscillating cams (K-17 and K-16). A careful study of these cams will reveal both *eccentric* and *concentric* sur-

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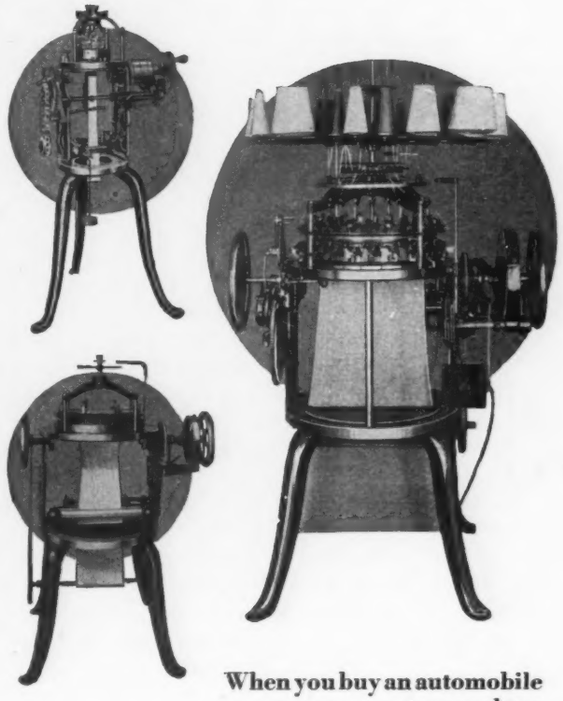

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faces, and this together with the manner in which the cams are paired up causes the cylinder to actually *slow down* while the *needles* are being *raised* and *lowered* by the *pickers*, and to speed up again as soon as the needles are *released* by the *pickers*. It is this simple and positive motion which makes it possible for Standards to *really travel* while reciprocating.

The oscillating cams are held to the main shaft (K-613) with a set-screw (C-813), a square lug (shown on the plate) which is a part of the lower oscillating cam extends down into the opening of the fork (K-29). This lug permits advancing or retarding the oscillating cams by making use of the adjusting screws (C-1088). When the oscillating cams and fork (K-29) are properly set, the lug should be about midway in the fork opening so that adjustments can be made in either direction without disturbing the fork. The fork (K-29) serves a three-fold purpose: first, it provides a means of adjusting the oscillating cams, second, it helps to hold the oscillating cams more rigidly to the shaft (both fork adjusting screws should be tight against the lug), and third, it acts as a bearing or support which must hold the main shaft (K-613) and all parts attached to it upward in proper position. It is important, therefore, that the fork set-screws (C-1003) be kept tight.

Every fixer knows that the main shaft (K-613) will drop down as soon as the fork set-screws are loosened as most all machines have a small space between the lower hub of the bottom oscillating cam and the top surface of the fork. Frequently when re-adjusting the fork the fixer will forget to raise the main shaft to its original position before the fork set-screws are tightened. This will cause the main gear (K-6) to drop away from the pinion (K-610) making a poor mesh at this point which may work a hardship on both pinion and gear teeth. In addition to this, the underside of the main gear (K-6) will ride on the top of roll (K-616) and cause disc ratcheting trouble; the upper oscillating cam is also likely to ride on the top of roll (K-604) and give trouble.

Timing Oscillating Cams and Segment Gear

Timing oscillating cams is a simple job for the experienced fixer but it is just the opposite for the apprentice boy. If he dismantles a machine himself he can of course mark the cams so he will know where to set them, but if he is asked to assemble a machine which has been torn down by someone else and not marked he is usually at a loss to know just how to begin. The following may be of some help to the man who is in doubt:

Mark the large end of the taper pin hole in the hub of main gear (K-6) with a center punch; also mark the large end of the taper pin hole in the shaft in a like manner. This will simplify lining up the holes when the shaft is inserted; the marks will be useful in the future. When the shaft has been inserted and the various parts placed in position, drive the taper pin (K-1163) in firmly, make sure that the marked teeth on the main gear (K-6) are meshed with the marked teeth on the upper pinion (K-626). Have the machine set in the leg or foot so the clutch is up, turn the crank handle until the large end of the taper pin in the main gear (K-6) faces directly toward the front of the machine. Turn the oscillating cams and fork (K-29) around until the segment gear comes forward far enough so that 16 teeth can be counted on the segment gear; the 17th tooth should be meshed in the pinion.

The position of the oscillating cams and segment gear will be similar to that shown in the upper part of the plate except that 16 teeth will be visible on the segment gear instead of 11 as shown on the plate. This setting will not be perfect but it will be close enough so that anyone familiar with the machine can readily determine whether to advance or retard the oscillating cams by racking the machine on and off the heel or toe and noting how the clutch shifts.

Lubricating and Driving Mechanism

The speed, load, amount of friction, bearing area, etc., are the determining factors on any lubricating problem. No one particular brand of oil will accomplish miracles; there are, however, a half dozen brands advertised in the various textile papers (and you can count on those advertised in COTTON) that will do a thorough lubricating job on the drive and clutch assembly if used intelligently and regularly. Greases have been tried on the various gears and pinions, but they do not give best results due to their tendency to collect dust and lint and become hard and therefore lose their lubricating qualities. A good all-around oil for the parts shown on Plate 13 is one similar to heavy auto motor oil, preferably one that will stay put but be light enough to work into the bearings and not gum up or become hard. *Putting on plenty* and *getting through in a hurry* is the average apprentice's idea of oiling, and many fixers have the same weakness. Strange as it may seem, most fixers are very fussy about their light oiling such as needles, sinkers, picks, etc.; it makes little difference whether they do it themselves or have it done by an apprentice—they see to it that it is done right. Heavy oiling, however, which includes all of the parts shown on Plate 13, is very often neglected until a bearing or shaft is ruined, and then the apprentice gets cussed out for his carelessness. Part of the fixer's job is to see that all oiling is done thoroughly. Proper lubrication is the chapest form of insurance against wear and tear. We all have heard the old saying—a stitch in time saves nine. Translated into lubricating language it would read "A few drops on a bearing will keep it from wearing."

Plate 14

Disc Ratchet Operating Parts

Some reference was made to part of the disc ratcheting mechanism in the discussion of parts shown on Plate 9. We will consider the remaining parts as shown on Plate 14. The U-shaped ratchet lever (K-15) is a heavy one-piece casting. It has ample bearing surface and is pivoted on the shaft (K-608). The ratchet pawl (K-406) is attached to the upper part of lever (K-15). The adjustable stud (K-615) holds the roll (K-616) in position on the lower part of lever

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Paris now shares style-leadership with America, for children's clothes as well as for women's. And steadily, year by year, the artistry and ingenuity of American designers, knitters and yarn manufacturers combine to make the clothes of American children more and more widely recognized as the standard of the world . : . for style, for comfort, for durability.

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(K-15). The ratcheting motion for lever (K-15) is secured by the roll (K-616) riding against the outer surface of oscillating cam (K-4). This cam being attached to the under-side of main gear (K-6). The end of lever (K-15) with roll (K-616) resting against cam (K-4) is shown on Plate 13. It is listed as part No. K-8 in my catalog, which is dated November 1929. This no doubt is merely an error in printing; it should be listed as (K-15); the end of lever (K-8) is directly below (K-15). The time at which the individual pattern disc moves are to be made is controlled by the various lugs on the pattern chain links. These lugs raise the lever (K-405) so it will release the arm (K-404) which is attached to lever (K-15). When the arm (K-404) is released, the spring (K-874) pulls the lever (K-15) toward the cam (K-4). The roll (K-616) will now move in and out according to the shape of the cam (K-4), causing the lever (K-15) to make one stroke for each revolution of the cam (K-4). The ratcheting continues as long as the lever (K-405) remains on a lug link. As soon as lever (K-405) falls off a lug link, the arm (K-404) is locked, causing the ratcheting lever (K-15) to become inactive. The cam (K-623) which is attached to arm (K-404) serves a double purpose; it locks arm (K-404) and provides the means for making short ratchet moves. The latter is accomplished by the lever (K-405) being raised slightly by low lugs on the chain, causing the hook on lever (K-405) to stop against the step on the rear of cam (K-623), thus preventing a full stroke. The spring (K-875) holds the lever down on the pattern chain and the pin (K-1104) acts as a stop for lever (K-405).

In making transferred numbers it is important to have the yarn enter the needles at a certain place when knitting begins. Most fixers set up their machines so the entry is made about three to four needles in front of the first long butt needle. Evidently the builders of Standard machines realized the importance of correct yarn entry for they supplied a special cam solely for this purpose. This cam (K-1136) is attached to the under-side of cam (K-4). It can be advanced or retarded by loosening the set-screw (C-808), thus making it possible to drop the yarn into the needles at the desired place in a few minutes' time by making a simple adjustment.

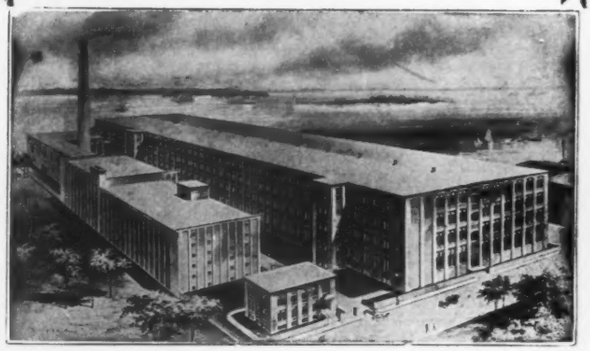
Leg and Chain Rack Construction

Standard legs are cast in pairs with heavy cross braces, making a firm foundation for the frame to rest on. They can be moved a few feet or clear across the floor without danger of legs working loose or being broken. Part of the right hand leg is arranged to take care of the chain sprockets for short chains. The bracket in the rear will take care of the longer chains. The tension spring (K-636) and the pivoted arm (K-635) keep just enough tension on the chain to prevent buckling. Many costly jam-ups are prevented by this simple arrangement.

The next article in this series will cover the parts shown on Plates 15 to 19, inclusive, in the Standard catalog.

MARTIN A. SHAW.

Quissett Mill
New Bedford, Mass.



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COTTON

ATLANTA, GEORGIA

Selecting Colors for Hosiery Dyeing

EDITOR COTTON:

I would like to discuss the matter of selecting colors for hosiery dyeing and would appreciate your contributors to "KNITTING KINKS" discussing my thoughts and giving their ideas on the subject.

The one-bath, the two-bath or any method of dyeing may be employed for dyeing hosiery and any finish can be put on after dyeing, but all this will not be accomplished if the proper colors are not used in the dyeing procedure.

To my mind, the greatest aid to the present-day dyer during the past 10 years has been the development by the dyestuff companies of colors that could be used generally without the old headaches of past years. In the past, the mills using the straight colors were few and far between. Most mills using mixtures compounded by the dyestuff companies. Very little experience was needed to dye hosiery then, as black, grey, cordovan and navy were the predominating shades. Five years ago many small mills were still trying to use the same methods.

The mills soon found that the old rule must be broken and experienced men that could use straight colors, and thus develop their own shades, must be had. Today there are numerous experienced dyers in the southern mills who can select their colors and match their own shades.

Every dyer has his own yardstick by which to measure the qualities and properties of a dyestuff, but the following procedure I think will measure up to the average by which to judge or select a dyestuff. There are several properties which every color, to be a good color, should possess as much as possible, wherever they may be used. These are:

1. Level dyeing
2. Fastness to light
3. Fastness to washing
4. Ability to be added to the bath at the boil with level dyeing results.
5. Ability to strip out clean
6. Equal money value.

To the foregoing, a few properties may be added when selecting colors to dye rayon or cotton. They are:

1. Does the color give a good union in combination with other colors between cotton and rayon?
2. Does the color leave Celanese white?
3. How is the color affected by dull finish and splash-proofing compounds?
4. How is the color affected by acids and alkalies?

If the color is to be used for half-hose, the following properties may be added:

1. Does it leave Celanese clean?
2. Does it leave spun silk clean?
3. Does the color give a good union between rayon and cotton?
4. If the Celanese is to be dyed, does the Celanese color leave it appreciably white?
5. Will the Celanese color stand bleaching?

If the colors are to be used on silk and cotton, the following properties may be added:

1. How much does the cotton color stain the

Test, for yourself, *these remarkable wetting out properties*

THIS SIMPLE ABSORBENCY TEST IS BUT ONE PROOF OF THE EFFECTIVENESS OF "HOUGHTON'S AIDS"

Here is a simple test which shows relative wetting-out properties. Take three identical pieces of cotton yarn. Drop one in a glass containing a 3% solution of Houghton's Aid No. 9, second in a glass containing 3% solution of any competitive brand or sulphonated castor oil. Drop the third in a glass filled with water.

The piece dropped in water will stay on top, as you know. The piece dropped in the glass containing Houghton's Aid No. 9 will fall to the bottom of the tumbler much more rapidly than will the piece dropped in the competitive solution.

A modification of this test can be shown by making price-equivalent solutions. On this basis Houghton's Aid No. 9 will show a faster wetting-out speed per dollar expended, which is further proof of its superiority.

Interpreted in dye house performance, these tests mean that by using Houghton's Aid No. 9 the tightly knit portions of hosiery—toe, heel, instep and seam, will be more readily wet out and, therefore, will dye more uniformly. Further dyeing can be done at lower temperatures, thus protection clocks and ingrained colors. The hosiery will finish more uniformly and economically and will be more readily boarded.

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3 TYPES
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We make a Conditioner specifically intended for Cotton Yarn . . . a Conditioner for Silk Yarn . . . and a Conditioner (as described here) for Rayon Yarn. Tell us your field of operation and we will be pleased to submit what may prove the answer to your problems of quality and quantity *lower cost* production.

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silk?

2. How much do the silk colors stain the cotton?

3. Does the cotton color dye the silk?

4. How is the color affected by acids and alkalies?

5. How is the color affected by dull finish and splash-proof compounds?

6. Will the silk black reduce?

7. Is the silk black affected by sulphur dioxide fumes?

8. Is the color suitable for the one-bath, two-bath or both methods of dyeing?

9. If a Celanese picot is used, special colors must be adopted to leave it clean.

When dyeing goods of rayon, silk and cotton union colors are used as far as possible with the possible addition of a little silk color to shade the silk.

Plain cotton ladies', children's, men's half-hose and anklets should be dyed, observing the general properties of the colors. The other properties do not apply to these goods to a great extent.

Today the dyeing of rayon ladies' goods has become quite a problem due to the many constant changes in the manufacture of the yarn and the problem of gaining a good union between the cotton and rayon on the present dark shades.

To secure good unions on some classes of rayon causes the dyer to be constantly changing his formulae. So between the mill trying to save a dime through changing yarns and as many changes the manufacturer might make, the dyer lives between the devil and the deep blue sea.

Every dyer that dyes much rayon ladies' goods has at least three sets of combinations. He will have usually the following:

1. Some type of Catechine Brown as a base with a red and black in combination.

2. He may have the same base brown but with red and two blacks, one of which dyes the cotton more than the rayon and the other vice-versa.

3. A chestnut or maybe a red shade of brown as a base with black and yellow shading it.

All of these combinations give good results depending on what kind of rayon is used and under what conditions it is dyed.

When selecting colors for half-hose some of the same colors may be used that are used on ladies' goods. If the stockings have Celanese in their construction, the colors must be used which will leave it white. Many ladies' goods colors are not suitable for half-hose because they do not have the body or depth of shade for a base. The same is true of half-hose colors for ladies' goods. The color may not have the level dyeing properties of a ladies' goods color and also it may not work in combination with other colors. This may be due to the construction of the goods or its rate of exhaustion may not be in line with the other colors in the combination.

Celanese colors are usually judged according to their strength, exhaustion properties, tone of shade, and money values.

When selecting colors for silk and cotton, there

(Continued on page 124.)

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PAPER BOXES

REVIEW OF THE YARN MARKET

Philadelphia, Pa., February 16, 1935.

BASIS of tens, ordinary quality, carded knitting yarns are now being quoted in a wider range, from 25½ to 28 cents, with most of the orders being put through at 26 to 26½ cents, the quantities running from very small lots for quick delivery up to 200,000 pounds and over on blanket contracts which give buyers the option of specifying up to 30s.

The general characteristics of recent trading are as follows: Volume has recovered from the year-end slump but is below that of a year ago and this has been a disappointment to many spinners and distributors of sale yarns. This applies chiefly to carded counts. Combed peeler sales and shipments remain active, being sufficient for producers to operate on an average of around 60 hours per week.

Shipping requisitions have held up well, thus far, and only recently have a few requests been received from consumers for delays in their yarn deliveries, this being confined to carded yarns. Specifications on combed peeler yarns have been good. It is indicated from the foregoing that at least through the rest of February it is unlikely the majority of spinners will accumulate unsold stock yarns of any consequence.

Prices in every department of the sale yarn business have seldom been more unsatisfactory to sellers than is now the case, and for this there are a variety of explanations.

The claim is general among sellers that it is difficult to obtain prices that cover adequately the cost of production, let alone other essential items of cost, and yet not all the sales at low prices represent a loss to the sellers, as a few yarn mills had the foresight and financial resources to buy heavily of cotton two years ago. The other principal source of low-priced yarn, it is claimed, is among such yarn mills as make it their practice to delay as long as they can the payment of their cotton processing taxes.

The yarn mills basing their prices legitimately on the relatively low cost to them of cotton they shrewdly acquired long ago, seldom are responsible for undermining the market values of yarn, since they naturally prefer to get as much as they can for their yarn; but when they need business and encounter too much competition, they are in a position easily to make a price that will bring them the orders and on such occasions they sometimes sell away below the general price range. Usually they favor maintaining prices on a sound basis.

It is otherwise with the mills that dodge the payment of the processing tax, as their underselling is a continuance performance, and lately it has been hinted in the markets that the number of these tax delinquents has been increasing, although definite information on this has thus far been unobtainable from the Collector of Internal Revenue in Washington.

There seems to be no doubt that the handicap of the cotton processing tax has worked havoc with the customary, long-accepted standards of quality of cotton sale yarn. It was recently asserted by a market interest of prominence that the temptation to use undue amounts of waste in cotton spinning has become so overpowering that comparatively few yarn mills have continued to keep their quality unquestioned, regardless of the effect that substitution has on the prestige of the mills.

This does not constitute a blanket indictment of all sale yarn spinners, because there are a number whose yarn is as high-grade as ever and will remain so, as they proclaim they would sooner shut down than trifle with their good name. The practice of cheapening the yarn with waste, however, has become widespread enough for a good many consumers to take protective steps in the form of demanding a declaration on the invoice certifying that the spinner either has paid his processing tax, or will on the first due date, and that the yarn is of standard cotton content.

The outlook is for volume of sale yarn business to diminish earlier this year than last, but not to slump as rapidly as happened last spring. The large majority of customers have not purchased yarn beyond their actual needs for the next 30 to 60 days. Deliveries should remain more regular than was the case in the second quarter last year and there should be less pressure from spinners' stocks. There is nothing in the outlook to encourage expectation of better margins for spinners, barring inflation or some other stimulus from outside the textile industry.

Selecting Colors for Hosiery Dyeing

(Continued from page 123.)

are two things to think about:

1. Do you wish to use union colors or do you wish to use colors that dye their individual fibers?

Today I believe most dyers are using cotton colors that leave the silk clean and silk colors that leave the cotton clean. The fault found with the union colors was the uncertainty of which fiber they would have the most affinity for from day to day or even from run to run. This can be caused by variations in the water, dyeing assistants, shipments of dyestuffs, and many local conditions that might be peculiar to one's plant.

Today I think the color arrangement is best as we are not aggravated by the cotton colors pulling off on the silk.

One of the biggest troubles the dyer of today is confronted with is the reduction of the silk black on Sulphon Cyanine Blacks. There are three things that cause this trouble:

1. The sericine; 2, improper pH control of the de-gumming oil, and 3, improper aeration of the dyebath.

Research work is being done on this problem and much to eliminate it has been accomplished. One dyestuff company has produced a black that eliminates this reaction to a great extent.

Several of the silk blacks are affected by sulphur dioxide fumes. Proper selection of the black will eliminate this trouble. CONTRIBUTOR No. 6373.

PROFIT OR LOSS

Weighed in the Boil-off

When fabric reaches the boil-off it represents a big investment in materials, labor and overhead expense. What happens in the boil-off determines the selling value or appearance and durability of the fabric. In other words the boil-off weighs the difference between production investment and selling profit.

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There's no place for "trial and error" processing in the new shorter hours—higher wage schedule of today. Your finishing materials must be right.

Laurel Soaps, Oils and Softeners are right. They are made from the best obtainable raw materials, checked and rechecked in our laboratory to give you the desired results without chance. That's why Laurel Products cut costs for textile manufacturers.

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ONE of the vital reasons for the tremendous commercial development in the United States is the American business press. The American business man, manufacturer, wholesaler or retailer, is presented each month with a veritable encyclopedia of information in his chosen field. To the schools of America, and the daily press, as instruments of democratic education must be added our business press with its specialized service.

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The American Business Paper is one of the evidences of America's willingness to learn. Like its widespread system of democratic education, the Business Paper serves an industry's needs for impartial information, placing at each reader's command the same accumulation of data, for such use as he may make of it.

P. Q. SILICATES *build profits*

ARE YOU taking advantage of the savings that P. Q. Silicates of Soda can offer? Leading mills use them to improve the appearance and wearability of textiles and to reduce costs.

P. Q. Silicates have been known for over three-fourths of a century for safe, quick removal of oils, greases and dirt.

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General Offices and Laboratory: 125 S. Third St., Philadelphia.
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IMPROVE RESULTS - LOWER COSTS

ROSANTHRENE AND DIAZO FAST COLORS

Practical WASH-FAST GROUNDS FOR DISCHARGE PRINTS ON COTTON, RAYON AND SILK

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SOLVAY 58% Soda Ash *contains* 58% of *actual* sodium oxide.

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Specify SOLVAY — the standard of SODA since 1881.

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The added lubrication makes the cotton Card, Draw and Spin *better*... reduces Dust and Lint.

MINEROL conditions the fibre and softens the natural coatings, so that the cotton reacts more readily to subsequent operations, such as • Dyeing • Bleaching • Mercerizing.

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Originators of the BRETON MINEROL PROCESS for CONDITIONING COTTON

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MINEROL AIDS TEXTILE FINISHING

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A Stable, Non-Volatile WETTING AGENT *for Mercerization*

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100% RECOVERY

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"THE WEAVER'S FRIEND"

THIN BOILING GREATER PENETRATION

CARRIES WEIGHT into THE FABRIC

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a superior assistant for Beam, Spool, Bobbin and Package Dyeing.

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the economical assistant in warp sizing. Penetrating, Lubricating and wholly efficient.

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GOOD MONEY VALUES
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for LOW COST BLEACHING *of any fabric*

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CONCENTRATED HYDROGEN PEROXIDE

Hundreds of mills throughout the United States have made this up-to-date discovery: that *Becco* Concentrated Hydrogen Peroxide is a short-cut to superior bleached goods at lowest unit cost . . . *Becco* Technical Service is prepared to show your plant the way . . . Write for full details.

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Kali doesn't stand simply as a trade name for superior products used in the textile field,—it stands for research and practical cooperation. Let us prove to you how Kali products will improve every process from the spinning to its final finishing of either woven fabrics, knitted fabrics or cotton bats.

PEROXOL has been developed to use in your Peroxide bleach. It cleanses the fabric and opens the fibres so as to permit the bleach liquor to penetrate and thereby produce a better and more even white.

PEROXOL can be added directly to the bleach bath or used in the wetting out bath before bleaching.

HYDROXY PENETRATORS have been developed and are used extensively for penetration and level dyeing in Raw Stock, Beam Dyeing, Package Dyeing, Skein, Hosiery and Piece Dyeing. A small amount in the dye bath saves time and labor.

The KALI Mfg. Co.
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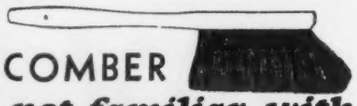
The most popular brush in the textile mills today



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Leading Throwing Plants which use this product, consider it the best Soaking Oil on the market for Viscose and Acetate Silks.

CAMPBELLINE ART SILK OIL SUPER is the result of exhaustive research. It meets *every* requirement of the Throwing trade for processing all the synthetic yarns.

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- **Softness**
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A trial will readily demonstrate the excellent working properties of CAMPBELLINE ART SILK OIL SUPER, as well as the economy it will produce in your soaking costs. Write for working sample or trial barrel on approval. It will pay you to investigate.

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KNEW ITS VALUE

Had not George Washington appreciated the value of cooperation on the part of his men and generals, and had he not known how to get it, the American Revolution would have been a dismal failure.

Success in modern industrial enterprises also necessitates a high degree of cooperation. Furthermore the modern conception of cooperation goes beyond company limits and recognizes a mutuality of interest between buyer and seller. The exchange of products for money is incidental. The ultimate goal is maximum utility and satisfaction for the user.

Hence the growth of service, which is merely another name for cooperation between buyer and seller.

A-H Service to users of textile chemicals is rendered by a staff of specially trained chemists assisted by a completely equipped, modern laboratory and a company contact of 120 years with all branches of the textile industry.

A-H chemists will consult with you, free of charge, in connection with new sizing, finishing or printing problems, or will check with you on the efficiency of routine methods.

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Sizing and Finishing Gums and Compounds • Soluble Gums • Softeners • Soluble Oils • Tallow • Waxes • Soaps • Flour • Dextrines • Starches • Pigment Colors and Lakes • Ammonia • Acids •, Blue Vitriol • Borax • Bichromate of Soda • Bichromate of Potash • Liquid Chlorine • Chloride of Lime • Caustic Soda (solid and flaked)

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the fence
IS OUT!

in business, too!

—an old adage perhaps but a comforting assurance for the Superintendent when a Stewart Non-Climbable Chain Link Wire Fence stands as a 24 hour watchman to KEEP OUT trespassers and vandals.

Proper Fencing abolishes their freedom of access to your property — and Stewart's 49 years of fence building has developed the recognition as the "world's greatest Fence Builders". For information write—

THE STEWART IRON WORKS COMPANY, INC.
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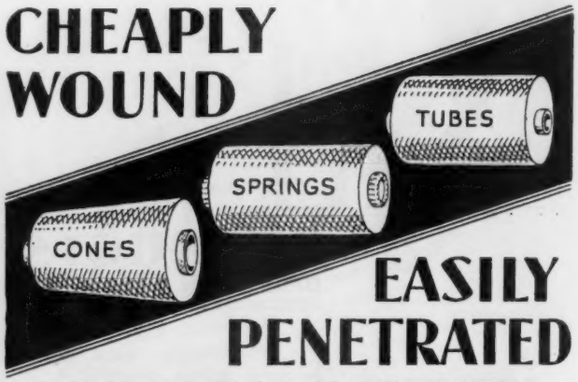

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Specifications for all types of
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There's a reason!
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"Smoother than Grease"
Since 1890

ELEVENTH SOUTHERN TEXTILE EXPOSITION

TEXTILE HALL
GREENVILLE,
SOUTH CAROLINA

April 8 to 13, 1935

Everyone engaged in the textile industry is cordially invited to attend the eleventh Southern Textile Exposition in Greenville, South Carolina, April 8th to 13th. New and improved machinery installations, accessories, and supplies will be shown by leading manufacturers.

April 8th, 9th and 10th the secretary of The Textile Foundation and the heads of all American textile schools will be present. Wednesday, April 10th, the Greenville Section of the American Society of Mechanical Engineers will have a divisional meeting. Friday, April 12th, the Southern Textile Association will have an exposition dinner. Other interesting events will be on the program for the week.

Special railroad rates have been secured in the Southern territory. From Greensboro on the north, and Atlanta on the south there will be a nightly Pullman car service. Reservations for berths should be made as long in advance as practicable.

We invite inquiries and correspondence.

Please Remember the Dates

April 8 to 13, 1935

TEXTILE HALL CORPORATION

Greenville, S. C.

"Regardless of what else we need—we've GOT to have good rolls, spindles and RINGS!"

Replacement of badly worn rings means an immediate improvement in quality of work. Often a 10%, 12% or 15% production increase in spinning and twisting is secured. Just ask your superintendent: "Could you improve our spinning room if some frames had new rings?" His answer may reveal that you can put your mill in a more favorable competitive position by the simple step of installing new DIAMOND FINISH rings.

WHITINSVILLE (MASS.) SPINNING RING CO.

DIAMOND FINISH

Makers of Spinning and Twister Rings since 1873

Southern Representative: WALTER L. NICHOLSON, 2119 Coniston Place, Charlotte
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CARD GRINDING COSTS ARE MATERIALLY LOWER

We are continuously receiving testimonials on the merits and savings effected by the new Roy Solid Vitrified Wheels for cotton card grinding.

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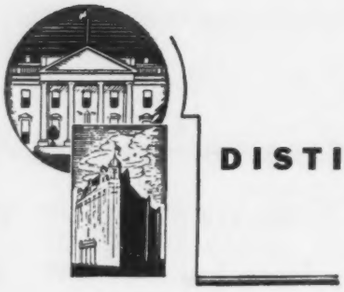
WHEN you purchase a textile repair part made by HENDERSON, you can be sure it will fit the machine for which it was intended. We have precision patterns for practically all makes of textile equipment.

HENDERSON

Long experience with textile equipment and knowledge of the weak points in present day textile machinery, enable us to produce textile repair parts that stand up under severe service and make textile machinery operate more efficiently.

REPAIR PARTS

Check up your stock room and don't let missing parts hold up production. HENDERSON Repair Parts will help you to reduce maintenance costs. Write for prices, on any part you desire, to HENDERSON FOUNDRY & MACHINE WORKS, HAMPTON, GA.



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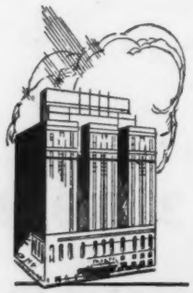
The Willard served as the official White House when President and Mrs. Coolidge lived here for a month during his administration ... With its modern facilities, the Willard retains all the tradition exclusively its own.

Single Rooms with Bath $4 up
Double Rooms with Bath $6 up

The **WILLARD HOTEL**
"Residence of Presidents"
WASHINGTON, D. C.
H. P. Somerville, Managing Director

...HAVE YOU HEARD *the one about the traveling salesman?*



He went to bed at the William Penn and slept twenty years! Well, maybe that is a little exaggerated. But anyway, the beds at Pittsburgh's number one hotel are so comfortable you don't ever want to get up. The food in the four famous restaurants is equally exceptional, and the prices reasonable. Quiet, well-furnished rooms, $3.50 single; $5.00 double, all with bath.

1600 ROOMS . 1600 BATHS

HOTEL WILLIAM PENN
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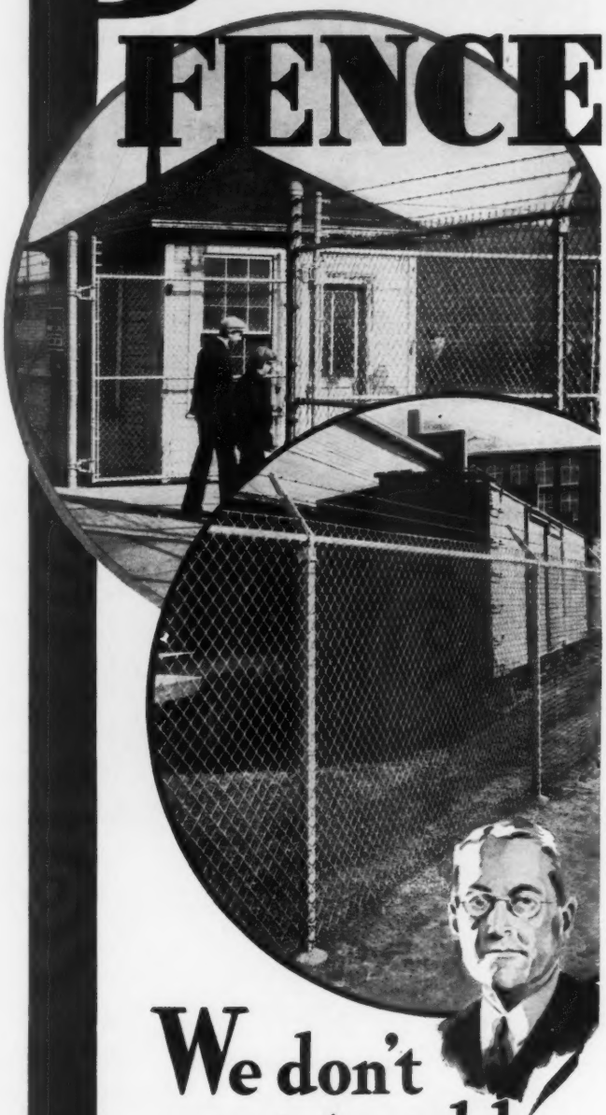

We don't want trouble

. . but if it comes

"there's a good, stout Page Fence around the place that will stop them long enough for better judgment to get in its work. It's been there a long time, too. Just as good today as it ever was. It pays to get PAGE." Why not determine now what it would cost to give your property complete protection? There are 82 Page Fence Service Plants throughout the United States. Write one of the District Offices below for name of Service Plant nearest you.

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America's first wire fence—since 1883

STOP!

Don't let them Rob YOU!

Don't put up with mopping . . scrubbing by hand. Such methods mean delay, soilage, spoilage, loss of time.

Put a stop to floor cleaning delays, partly-cleaned floors, wet, slippery floors, unevenly cleaned floors, by cleaning floors with this amazing combination FINNELL. It picks up the water as it goes along. When this FINNELL has gone over a spot the floor is not only clean . . it is dry. It is especially designed for covering large areas without interfering with the work.

There are smaller machines, and other types—a complete line—available for hard-to-reach places, small areas.

See it in Action. See the FINNELL demonstrated on your floors. FINNELL representatives everywhere. Nationwide service. Write for particulars of our demonstration offer. FINNELL SYSTEM, INC., 1303 East Street, Elkhart, Indiana. Canadian Distributors, Dustbane Products, Ltd., 207 Sparks Street, Ottawa, Ontario.

SCRUB *and* Mop *in* ONE Operation

Once over with brushes digging out the dirt — then back again while the vacuum picks up the dirty water before it has time to settle. A marvel of speed and efficiency.

FINNELL

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Comfort and relaxation are enjoyed by guests of the Atlanta BILTMORE to a superlative degree. Rooms are large and commodious, with full outside exposure; furnished to enhance the feeling of ease and contentment. Roomy baths, and circulating ice water, of course.

Add to comfort and relaxation such thoughtful conveniences as one day laundry service without extra cost; service at your elbow, reasonable rates, and the choicest foods of the world on your table—and you have a few reasons why more and more "people who know" are becoming regular guests of the

ATLANTA BILTMORE

"The South's Supreme Hotel"

RATES:
Single—$3 $4 $5
$4.50 $5.50 $6.50
Two persons to room, double bed.
$5 $6 $7
Two persons to room, twin beds.

MEALS:
Dining Room: Breakfast, from 35c.
Luncheon, from 75c.
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A SYMBOL

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600 ROOMS, Each With Bath
From $2.50 Single, $4.00 Double

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THE BOWEN PATENTED BEVEL EDGE TRAVELER
VERTICAL OFFSET TRAVELER
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EVEN SPINNING AND TWISTING
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FOR
SILK, RAYON AND FINE WORSTED YARNS. A TRAVELER THAT WILL NOT UNTHREAD. ESPECIALLY DESIGNED FOR LUBRICATING RINGS.

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"We've Quit Hammering Them In—
We now use exclusively

Safety
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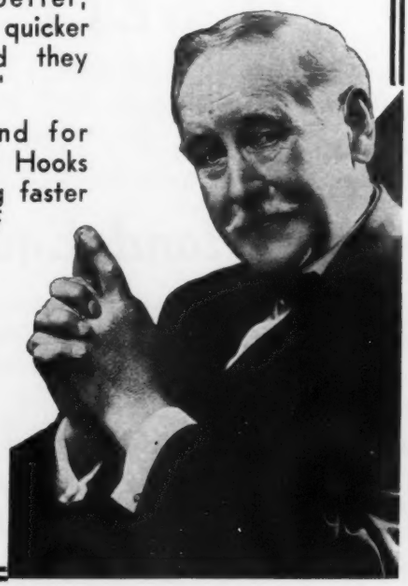
BELT HOOKS
WITH THE STEEL BINDER BARS

We get better, smoother, quicker lacings and they last longer."

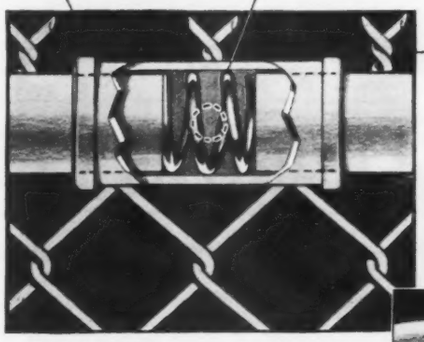
The demand for Safety Belt Hooks is increasing faster than that of any other.

Ask Your Jobber

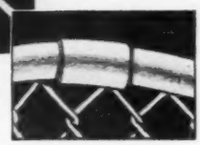


SAFETY BELT-LACER CO.
TOLEDO, OHIO

why a Cyclone fence stays straight



The Ordinary Way Rigid coupling cannot allow for expansion and contraction of rails. Posts are displaced, rails broken or bent.



The Cyclone Way A sturdy expansion coupling with enclosed heavy spring compensates for expansion and contraction. No breakage or bending. Fence stays straight.

● Top rail actually pulled apart as the metal contracts with the cold—top rail with "waves" in it caused as the metal expands with the heat! Huge repair bills and an unsightly fence. Guard against its happening to *your* fence. Demand "Cyclone" made only by the Cyclone Fence Company, for Cyclone has engineered a special feature which protects this fence from the effects of changing temperatures.

This is but *one* of the hundreds of features which protect Cyclone owners from repair bills and inconvenience. Features that would probably never occur to you unless you have read the Cyclone booklet, "Fence—How to Choose It—How to Use It."

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It will take you into the facts that determine fence quality. It will enable you to protect yourself in a fence purchase. It may save you a costly mistake. No matter how small or large your fence requirements are—you need this booklet before buying. Use the coupon at once.

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Cyclone is not a "type" of fence, but is fence made exclusively by Cyclone Fence Company and identified by this trade-mark
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Fully 25% of All Cotton Textile Spindles in the United States are Operated on the Loper System.

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"Cotton Mill Machinery Calculations"

EVERY Textile Man should have these reference books. They cover in a detailed and thorough manner all calculations necessary to be made on any cotton mill machinery manufactured in the United States and constitutes one of the best references on the subject obtainable.

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Why not dispose of this second-hand machinery at a profit? COTTON is read by thousands of cotton mills that are hardly touched by Northern journals.

You Can Sell Your Second-Hand Equipment

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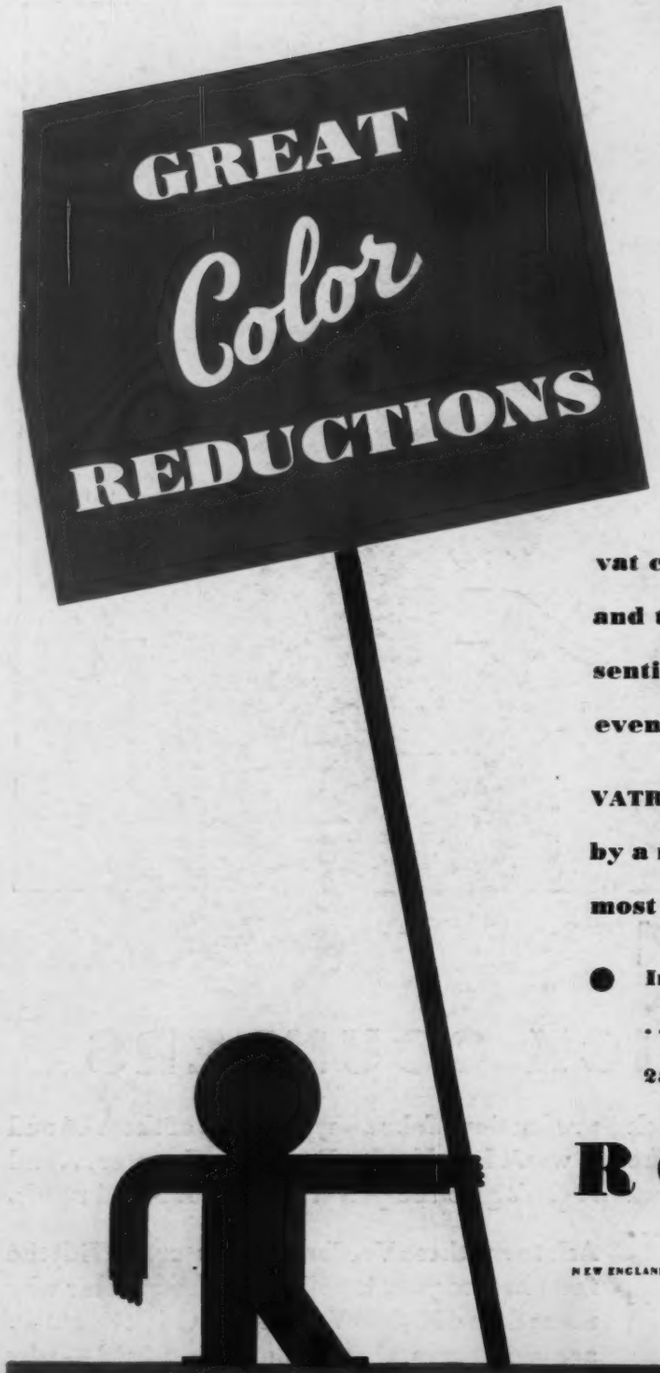

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